Review of the Florida Birth-Related Neurological Injury Compensation Association (NICA) Unpaid Loss and Defense Costs

December 31, 2016

FLORIDA OFFICE OF INSURANCE REGULATION

David Altmaier, Insurance Commissioner

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Part I. General Information

Overall Funding of Liabilities, Including those of 2016:

Pursuant to s. 766.314(7)(a), Florida Statutes, the Office of Insurance Regulation "Office") has undertaken an actuarial valuation of the assets and liabilities of the Florida Birth-Related Neurological Injury Compensation Association ("NICA"). The results of the review pertaining to the loss and defense costs from 2015 and prior years, as well as those estimated for 2016, of NICA provide best estimates of the needed loss and defense reserves at 12/31/2015 of $582 million and the expected 2016 claims costs of $36 million. The 2015 and prior costs compare favorably to the approximately $1,010 million that NICA carried at 12/31/15. The $36 million of new liabilities does not compare as favorably to the $27 million of assessments collected by NICA. These overall results are significantly lower than those of last year's study, with an improvement in the expected interest/inflation off-balance and a reflection of some of the 2016 claims as minor rather than serious claims being the key reasons

Those results are statistically-derived predictions of NICA's future claim payouts. The actual results should be expected to vary from those predictions. As a guide to the ability of NICA to withstand worse-than-expected losses that might materialize during the next twelve months, the 75th, 85th, 90th, 95th, 98th, and 99th percentiles of the possible costs (values which the actual costs would not be expected to exceed in 75%, 85%, etc. of all possible cost scenarios) are listed in the table below:

Various Percentiles of Possible 12/31/2015 Unpaid Loss and Defense Costs for 2016 and All Prior Years

Percentage	Aggregate Costs
65%	$ 650 million
75%	$ 775 million
85%	$ 950 million
90%	$ 1,100 million
95%	$ 1,350 million
98%	$ 1,650 million
99%	$ 1,850 million

NICA's funds at 12/31/2015 (plus 2016 assessments) of approximately $1.01 billion held and $27 million in assessments, would anticipate funding to an approximate 89% confidence level.

However, it must be noted that currently a very high percentage of physicians that are eligible to participate in NICA do so. Further, the credits offered by most medical malpractice insurers for NICA participation generally suggest that the insurers perceive participation in NICA to be a bargain. Therefore, should losses turn adverse; it is likely that some limited price increases in future years would be accepted by physicians. So, NICA has some, but not unlimited, flexibility to buttress their ability to

pay claims with future price increases. This suggests that policymakers consider the prospect of premium increases as part of any scenario to provide security at any higher confidence level.

Uncertainty:

Actuarial uncertainty is high (as noted in the difference between the percentiles and the best estimate) with any group of claims that both pay over an extended period of time and whose payments increase with inflation. This body of liabilities is a clear example of that situation. Although a diligent attempt to identify and address all current and potential cost drivers was made, it is possible that some unusual event or series of events might cause costs to vary more significantly than anticipated. Within this study, no provision has been made for such events, beyond the projections by NICA. In particular, although the staff of NICA has made a significant effort (beyond industry standards, in the opinion of the Office) to account for this, it is possible that significant additional costs will arise as the parents of children[1] benefiting from NICA become unable to care for the children and nursing home care becomes necessary. Further, a certain number of children are in wheelchairs and other children may have health concerns that lead to health complications which would create additional nursing care and medical expenses. As noted earlier, NICA appears to have used better-than-industry standard methods to estimate the future lifespans of the children, but it is possible the lifespans will be generally longer or shorter in the aggregate due to remaining limitations of their methodology. Lastly, there is some suggestion that reinsurance arbitrators may not use the nominal amounts actually expected to be paid in future years, as was done in this analysis, to compute the amounts recoverable under the reinsurance. Those risk factors are not susceptible to actuarial analysis and as such are not reflected in the computations of the percentiles.

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[1] "Children" and "child" are used herein for the persons receiving injuries at birth which lead to claims, although some of those individuals are past the age of majority at present.

Comparison to Reserves Estimated by NICA's Consulting Actuary:

As the previous item shows, there is an exceptionally wide range of possible eventual costs for NICA. Again, that uncertainty is magnified by the likely long duration (over forty years on some claims) of benefits and the consequential highly leveraged impact of inflation, interest, medical technology, and life expectancy on future claim costs. Since inflation, interest, and life expectancy must be estimated, that creates a significant uncertainty in the present value of the claim costs. Further, the impact of any changes in medical technology is not estimable at present. Because of that uncertainty, any given specific point or local range has a fairly low probability of representing the actual cost that ultimately occurs. Since NICA's consulting actuary, George Turner, uses a different actuarial approach, it would not be unusual for him to obtain a significantly different best estimate. Due to the extreme uncertainties involved, this should not be taken as an indication that his work is improper. Rather, it may be more appropriate to consider the percentile in this report that his indication falls in and review whether both views are reasonable alternative approaches. However, this study does suggest a significantly wider range than that which has historically been suggested by NICA's consulting actuary. In light of the unexpected but possible scenarios of, say, very high inflation without matching interest rates (which were seen in the United States around roughly 1980), it would appear that such a range is valid.

Going Forward Adequacy of the NICA-2016 Birth Year:

As noted earlier, the review of NICA's 2016 loss costs suggests an actuarial central estimate of approximately $36 million of costs on a present value (discounted) basis. That compares to current assessment levels of approximately $27 million per year. Further, NICA typically has operating, etc. expenses of approximately $2 million. This strongly suggests that the Association is encountering an operating loss on a birth year basis. Considering the adequacy of NICA's assets to fund the present loss liabilities, it is conceivably only able to continue to fund those operating losses out of prior year assessments for some finite time. However, it is important to note that the investment return on the excess of invested assets over liabilities, assuming that current projections of the costs-to-date hold, will also act to fund or reduce the gap. However, should the liabilities emerge at much higher levels, there will be a combined impact of increased costs and reduced funding for the ongoing costs.

NICA has previously provided the following response:

> "The Association continues to monitor its actuarial position and investment structure closely.

> Each quarter, NICA reports its claims data to its outside consulting actuaries. Actuarial reserve evaluations are completed quarterly and a separate actuary performs a peer review.

> During the fiscal year ending June 30, 2014, the overall outstanding claims reserve decreased by approximately $29 million dollars. This decrease resulted from decreases in the actuarial estimates of incurred but not reported (IBNR) and development of known claims from prior birth years, claimant deaths and changes in remaining life expectancy

estimates. This trend of reduction of outstanding claims reserves has continued into the third quarter of 2014 with a reduction of approximately $5.3 million.

NICA, with the assistance of its outside investment consultants, completes an asset allocation review and study approximately every two years. Revisions to the investment policy are made as necessary to satisfy the primary goal of earning sufficient investment return to ensure payment of all current and future liabilities. Actual investment results are monitored closely by NICA, its outside consultants and the Board of Directors.

While NICA recognizes that it may be necessary to increase the level of assessments at some point in the future, the current trend of positive claims experience and favorable investment results indicates that no increase is needed at present. NICA will continue to monitor its position closely."

The Office will continue to review the adequacy of the going-forward funding of the Association in future studies.

Part II. Background

Structure of NICA's Claims Process:

NICA coverage is elected by obstetric physicians and midwives. Should a child meeting the eligibility requirements as set forth in Section 766.301-316, Florida Statutes, suffer damage at birth as a result of a "birth-related neurological injury", when the treating obstetrician has elected NICA coverage the child's parents may bring a claim through NICA's protocols (via an administrative law judge system). Under the statutes, certain preconditions, such as the obstetrician having posted his/her NICA election for parents, and the timeliness of the claim presentation, must be met. An award of $100,000, plus necessary medical and maintenance (e.g., modified vans, housing modifications) expenses for the lifetime of the claimant may be made by a Division of Administrative Hearings ("DOAH") administrative law judge. Parties involved in the hearing may include the petitioner family, the hospital and other entities involved in the birth, the treating obstetrician, and NICA. The administrative law judge may determine that the claim is compensable or dismiss the claim. Potentially, the claim may be consequently appealed by any of the parties. The data shows evidence of all these scenarios. However, the data suggests that a relatively small percentage of claims are revised on appeal.

Claim Progression:

Given the claims process discussed earlier, one may augment the process with the corresponding actions by NICA. A potential claim event initially occurs at the birth of a child. At that time, the claim has occurred, but has not yet been reported to NICA. So, the claim is referred to as "unreported". At some point, the claim is reported to NICA and a hearing date is presumably requested. After that, the claim is reported, but is considered a "pending" claim until it is "adjudicated" and an administrative law judge holds a hearing. During the hearing, the administrative law judge will either determine that benefits should be awarded, or "dismiss" the claim. Subsequently, the claim moves into either "awarded" (the Office's terminology is "compensable") or "dismissed" status. Either way, it may be regarded as "adjudicated". If the benefits are awarded, the costs are not always evaluated immediately, but are done as soon as practicable. Generally, soon after the year's end NICA management has reviewed all the claims and projected the future payments of each one in a worksheet. Therefore, the claim is initially "awarded", but is not "awarded and evaluated" or "pipeline" (both the Office's terminology) until the corresponding worksheet is prepared. Depending on the particulars of the claim and the type of dismissal, claims may be appealed. Claims are closed on either the final payout at the death of the child covered by an awarded claim, or a definite finding of dismissal and final payment of legal defense costs.

Class Action on Prior Nursing Care Provided by Family Members:

NICA officials informed the Office during a previous (2012) review that a class action had been brought against NICA. The class action related to the amount of loss that was paid or could have been paid as reimbursement to family members for care provided to children covered by NICA benefits. This case was resolved some time ago. This affected payment rates for nursing care rendered in the past and for nursing care provided in the future. In conversations with NICA staff, the Office was told that on the vast majority of the affected claims this had been resolved. Therefore, no special analysis of this issue was performed.

Primary Data Available for Analysis:

The primary data provided was an inception-to-date data extract, listing key paid-to-date and incurred-to-date, adjudication date, birth (accident) year, current status at DOAH, and other relevant coding as of 12/31/2015. The report included breakdowns between loss and defense (legal other than payments to claimant attorneys). The coding in those files was used to synthesize other information such as whether adjudicated claims were then classed as "awarded" or "dismissed".

The second primary class of data was the worksheets prepared after 12/31/2015[2] , in the Spring of 2016, on claims classed as "awarded". Sufficient detail for an estimate of the stream of future payments (after 2015) by calendar year was present in the worksheets. However, it was necessary to supplement the worksheets with inflation after 2016 cost levels and discounting for the investment income to be earned between 12/31/2015 and the time each payout is to be made.

Reinsurance Commutation:

The Office was informed that NICA had purchased reinsurance on claims from the 2003 and prior years. However, the actuary preparing this report was told that much reinsurance had been commuted. Due to its small size, the estimation of the amount recoverable made by NICA's actuary was used in lieu of an independent analysis. Although that assumes that the full amount of reinsurance is collectible, NICA staff members have indicated that it has been difficult to collect the full projected value in prior commutations.

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[2] The spreadsheets for claims awarded after 12/31/2015 were prepared using costs levels at the time the worksheet was prepared.

Part III. Highlights of Reserving Approach

Claim Classes Analyzed Separately:

Due to data limitations and the desire to provide the best estimates possible, different classes and categories of loss dollars required separate analysis. Those classes were:

1. Loss and defense dollars on awarded 2015 and prior claims (those with worksheets).
2. Loss and defense dollars on 2015 and prior birth year claims that are projected to be awarded[3].
3. Defense costs on claims expected to be dismissed in the future.
4. Any remaining reserves on closed claims.
5. Costs of claims anticipated during the 2016 birth year.
6. "Unallocated loss expense" or claims handling costs associated with all the claims above.
7. Anticipated reinsurance recoveries on claims from older years where reinsurance was purchased.

The worksheets driving much of the analysis reflect streams of future payments made in successive future calendar years (at 2016 cost levels). All the analysis was done by projecting a payments stream in future calendar years, then applying inflation to (if needed) 2016 and beyond to the payment date and the amount of inflation/investment discount offset beyond 2016.

Future Payments for Loss Dollars on 2015 and Prior Claims with Worksheets:

Since the payouts are specified in the worksheets, the information in each worksheet was simply converted to the payments by calendar year it specified. Defense costs were included at the amount of remaining defense case reserves at 12/31/2015. The average yearly payouts after adjudication across all open and awarded (worksheet) claims was prepared for use in estimating the costs and payout pattern of the other large reserve classes.

Future Payments for Loss Dollars Claims Awarded but not Evaluated and Claims Projected to be Awarded:

The first step in this analysis was to estimate how many claims are projected to be in this category. That is performed in Exhibit 3 Page 1 by first projecting the number of total claims that occurred/will occur in 2014 and prior. Using historical ratios of the percentages of claims awarded at adjudication, the ultimate number of claims to be awarded for 2014 and prior birth years was estimated. Then, all ultimate awarded claims are either in this category, have a current worksheet, or are closed. So, the number of claims in this category was computed as the number of ultimate awarded claims minus the number of claims with worksheets, minus the number of closed and awarded claims. As a last step, the estimated future awarded claims are separated into awarded claims from claimants dying before or soon after the award ("DA" or non-serious claims) and serious claims. The projected number of serious

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[3] Including the single "pipeline" claim mentioned in a prior footnote.

claims in this class was multiplied by the average payout stream and cost computed in the previous section (adjusted to begin in 2017[4]).

Future Payments for Defense Costs on Claims Expected to be Dismissed in the Future:

These were reserved using an average severity method. The average defense cost incurred per claim dismissed and average defense cost paid per claim dismissed in the 9/30/2014-12/31/2015 period was computed in Exhibit 5 Pages 3 and 4, along with the average defense costs of claims closed prior to that. Per the review, an ultimate defense cost per claim of $10,000 in 2016 dollars was selected. That was multiplied by the number of claims projected to be dismissed in the future. Since that amount was only under $2 million (prior to inflation and discount), it was deemed to be immaterial to the analysis and excluded for convenience.

Future Payments for Loss and Defense Costs on All Other Claims (Adjudicated, Dismissed, and Closed):

As defense costs on closed claims are only a small portion of the reserve, the defense case reserves in this segment were accepted without modification. As expected, the amount of the case reserves was nearly zero at $4,708. That is explicitly noted in Page 1 of the summary to clarify it was considered.

Payments for Claims from the 2016 Birth Year (NICA's 2016 Year of Operation):

Claims costs and the future payment stream for this year were estimated using a frequency and severity approach. The awarded claims frequency per physician or midwife insured for 2010-2014 was calculated. NICA's staff provided the historical and 2016 numbers of physicians and midwives it covered. Multiplying the two produced the projected numbers of awarded claims and dismissed claims for the 2015 year. A further adjustment for serious vs. DA claims was performed using values previously provided by NICA's consulting actuary. The loss severity and its payout pattern used the average payout of historical claims with worksheets (essentially, those that were still open at 12/31/2015), adjusted for inflation and discount to begin paying in 2018. A lump sum defense payment[5] of $10,000 adjusted upward to 2018 cost levels was also included on all claims, awarded or dismissed.

Anticipated Reinsurance Recoveries:

In prior years a mixture of specific (per claim excess of some retention) and aggregate excess (total payouts excess of some attachment point) was purchased by NICA. A portion of this reinsurance appears to still be in force on some of those years. In prior analyses, the worksheets of the individual claims in each year were analyzed to determine whether any individual claims were likely to exceed the

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[4] The average adjudication and payment start date of 2017 was determined in rough (considering the dollar amount) accordance with the 2012 report selection of 2015 (per a judgmental review of historical claim count patterns).

[5] Note that the corresponding value in Exhibit 2 is at 2016 levels.

retention. The projected excess amounts were captured and discounted back to the date of the review. The aggregate excess recoveries were computed similarly by combining all the claims in each accident year. Due to the small size, we did not perform this analysis this year. We merely accepted the conclusion of NICA's consulting actuary. This is not expected to produce a material misunderstanding of the financial condition of NICA. It should be noted that it may also be difficult for NICA to collect the full amount. Though the amount of reinsurance recoverable is substantial, it is nonetheless only about five percent of the total reserve.

Part IV. Highlights of Determination of Percentiles

Why are Percentiles Needed?

The best estimate reserves computed per the previous section represent an average or midrange outcome. However, the actual results will vary, at least somewhat, from that value. For a variety of reasons, it is even possible a very high number of Florida residents give birth in a year. This may lead to problems with an obstetrician's ability to serve them all, which could result in 2016 claims costs that are far larger than the projected 2016 costs and even larger than assessments collected by NICA.   However, that occurrence is very unlikely. Since the range of all possible loss payout scenarios is virtually unlimited, it is not practicable[6] for NICA to fund all possible costs that might emerge as claims are paid. Providing a range allows one to determine what level of funds is needed to fully cover 75%, 95%, etc. of all possible payout scenarios. Then, one may determine the level of certainty provided by a certain amount of funds. Policymakers should consider the degree of certainty provided by NICA's available funds. They should also consider the ability (although limited) of NICA to help fund any shortfall through increased assessments[7].

Conceptual Approach

The general approach used is to estimate a key statistical quantity, specifically the variance of the possible discounted loss payouts. Using the best estimate as the statistical "mean" and the variance so determined, one may construct a mathematical curve of the likelihood the final loss payments on 2016 and prior birth year claims will be less than various possible loss funding levels ("percentiles"). The curve used was from the most common probability distribution family with no negative values, the lognormal distribution family. The resulting percentiles then follow as standard mathematical computations.

Components of the Variance

Key items considered in estimating the variance were:

- The fact that the estimated future lifespans entered in the worksheets prepared by NICA were estimates[8] and the actual lifespans of the children benefitting from NICA will be different than those estimates. A judgmental estimate of the variance as 16% of the projected loss squared on each claim was used. This assumption was unchanged from the previous analysis.
- Many of the quantities included in the reserves are based on projected claims counts. The actual counts in each class are likely to be different.

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[6] For a detailed discussion of why this is impractical for society, see the author's dissertation at http://proquest.umi.com/pqdlink?did=2789658261&Fmt=7&clientl d=79356&RQT=309&VName=PQD
[7] As noted in the executive summary, participation in the Association is generally viewed favorably by many physicians and malpractice insurers. This suggests there may be some room to raise assessments if need be, but the room is limited.
[8] Per standard industry practice, these were treated as averages.

- The values based on claim counts use average severity, or cost per claim values. The actual average costs will likely be different.
- The values based on average severity are also affected by uncertainty in the historical severity arising from the uncertainty in the lifespans of covered children.
- Uncertainty in the off-balance of future inflation and future investment returns.

The contributions of each of these are shown in Exhibit 7. As one may see, the last variance source (inflation and investment uncertainty) dominates the others.

Part V. Actuarial Opinion

Statement of Qualifications and Methodology of Preparer Joseph Boor:

This report was prepared by me personally and at my personal direction. I am a Fellow of the Casualty Actuarial Society and have been so for over 35 years. I also have a Doctor of Philosophy degree in Financial Mathematics from Florida State University and am a Chartered Enterprise Risk Analyst. I have over 10 years of experience in medical malpractice, especially within the Southeastern United States. Further, I have extensive experience with long term medical claims and experience with claims involving special adjudication processes such as are involved with NICA's claims. I attest that the methodologies, techniques, and assumptions employed in this study, as well as the opinions and validation of assumptions were, in my opinion, all done per or consistent with generally accepted actuarial practices, all applicable guidance and standards of practice[9], and with a perspective of obtaining the most accurate estimates possible given the time and data limitations.

Statement of Reliance on Others:

In the course of the analysis, explanations, data, and general perspective on the data and claims environment were provided by Tim Daughtry and Kenny Shipley, employees of NICA. Further perspective and information on the construction of the data was provided by George Turner, FCAS (NICA's consulting actuary) during prior reviews. The review and feedback provided by all three during the 2014 analysis and subsequent follow-up review (and NICA staff during the course of this review) was helpful in providing perspective. A previous reviewer employed by the Office, Leigh Halliwell, FCAS, expressed that, except for inflation and discounting, the cash flows projected by NICA in their claim worksheets were reasonable predictions of the ultimate losses on each claim. This review implicitly contains a similar conclusion.

Limitation on Partial Dissemination from Preparer:

To avoid the misunderstandings associated with partial disclosures, I would request that a full copy of this report be provided on request to any party receiving portions of the documents.

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[9] These are promulgated by the Casualty Actuarial Society and the Actuarial Standards Board and should be taken to include key literature published or used by the Casualty Actuarial Society.

Suggested Retention of Records:

The basis for portions of this report is a set of worksheets with projected payments for a number of claims. Such individual claim reserve detail could potentially be used against NICA in court or elsewhere by claimants. Therefore, individual claim detail is not included within this report. It is recommended that the Office retain that detail in protected format for some length of time.

Signature:

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December 31, 2016

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Computation of Net Discounted Reserve Indication for 2016 and Prior Birth Year Claims at 12/31/2015

Category			Indicated Reserve	
Claims Awarded and Evaluated (with worksheets) (loss +defense)			$465,154,302	(Exhibit 1)
Pipeline and Future Awarded Claims (loss+defense)				
Ultimate awarded claims	416			(Exhibit 3 - Page 1)
-Awarded and closed	166			Data
-Worksheet claims	177			Data
Future claims	73			
Approx. % Claims Turner Titled "DA"		33%		(Exhibit 2)
Estimated # "DA" Claims		24		
Cost per "DA" Claim	113,900			(Exhibit 2)
Total Cost "DA" Claims			$2,743,839	
Approx. % Claims Turner Titled Serious		67%		
Estimated # Serious Claims		49		
Cost per Serious Claim	$2,423,861			(Exhibit 4)
Total Disc. Cost Serious Claims			118,551,023	
Case Reserves (loss and defense) on Closed Claims			4,708	Data
2016 Costs			35,500,244	(Exhibit 2)
ULAE (claims handling) (used NICA actuary's 9/30/14 value due to small size)			11,110,885	Data
Reinsurance Recoverable on Future Loss Payments (minus)			15,374,478	(Exhibit 6)
Total Indicated Reserve for Loss and Defense (incl. ULAE)			$617,690,523	
2015 and Prior Total Indicated Reserve for Loss and Defense (incl. ULAE)			$582,190,279	

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Confidence Levels Associated with Various Asset Levels

Simulation with Lognormal Distribution with Mean   617,690,523   and Variance   152,096,451,386,316,000   (Loss Summary and Exhibit 7)

Asset Amounts	Confidence in Ability to Fund Loss Payouts
$300,000,000	17%
350,000,000	24%
400,000,000	32%
450,000,000	40%
500,000,000	47%
550,000,000	54%
600,000,000	59%
650,000,000	65%
700,000,000	69%
750,000,000	73%
800,000,000	77%
850,000,000	80%
900,000,000	83%
950,000,000	85%
1,000,000,000	87%
1,050,000,000	89%
1,100,000,000	90%
1,150,000,000	91%
1,200,000,000	92%
1,250,000,000	93%
1,300,000,000	94%
1,350,000,000	95%
1,400,000,000	96%
1,450,000,000	96%
1,500,000,000	97%
1,550,000,000	97%
1,600,000,000	97%
1,650,000,000	98%
1,700,000,000	98%
1,750,000,000	98%
1,800,000,000	98%
1,850,000,000	99%
1,900,000,000	99%
1,950,000,000	99%
2,000,000,000	99%
2,050,000,000	99%
2,100,000,000	99%
2,150,000,000	99%
2,200,000,000	99%
2,250,000,000	99%
2,300,000,000	99%
2,350,000,000	100%
2,400,000,000	100%
2,450,000,000	100%
$2,500,000,000	100%

12/31/2015 Loss and Defense Reserve Funding Confidence Level of Different Possible Fund Asset Amounts (incl. 2016 Premium)
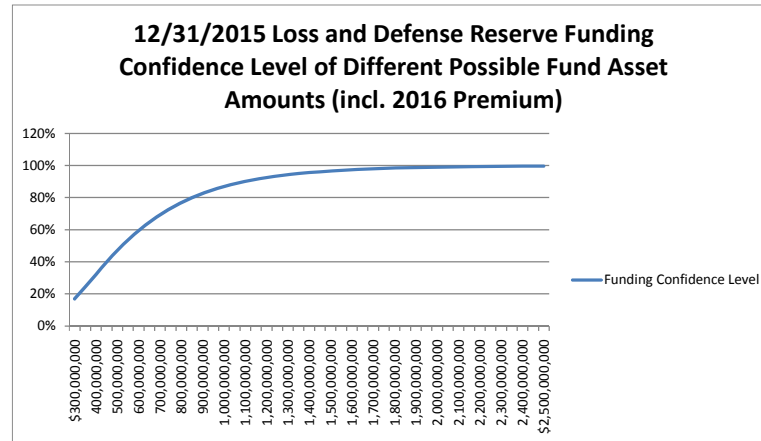
Approximate NICA Position with Funds on Hand 12/31/2015 and 2016 Assessment Revenue 0f $1,037,000,000 is boxed

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OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Payout of Loss on Awarded and Evaluated Claims (with Defense Cost Shown)
(in 2016 $$$)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Loss Payout	$18,321,524	$18,386,024	$23,933,922	$24,259,736	$24,642,001	$23,262,676	$23,738,285	$23,856,232	$24,098,325	$24,469,534
Defense		$0	$263							
Total Payout	18,321,524	18,386,024	23,934,185	24,259,736	24,642,001	23,262,676	23,738,285	23,856,232	24,098,325	$24,469,534

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Total Payout	$22,902,665	$23,447,382	$23,803,046	$23,957,613	$24,267,288	$22,097,947	$22,279,354	$22,624,327	$22,713,501	$21,079,962

	2,036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Total Payout	$18,607,050	$18,613,667	$18,667,712	$18,797,295	$18,790,151	$16,928,461	$16,786,539	$16,786,539	$15,948,614	$11,652,996

	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055
Total Payout	$9,658,493	$9,285,949	$9,285,949	$9,285,949	$9,285,949	$8,871,240	$8,871,240	$8,677,348	$4,767,621	$4,329,973

	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065
Total Payout	$3,836,279	$3,588,396	$3,588,396	$3,588,396	$3,155,327	$3,117,477	$3,117,477	$3,117,477	$1,473,670	$1,119,195

	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075
Total Payout	$196,522	$196,522	$196,522	$196,522	$196,522	$112,019	$112,019	$112,019	$0	$0

	2076
Total Payout	$0

Discounted and Inflation corrected to 12/31/2015 at	2.00% Inflation and	5.00% investment return.	$465,154,302	
(Rates are from Exhibit 10)				

Average inflation and discount effect	63%

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OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015
Computation of Anticipated Costs of Claims From 2016 Birth Year

Year	Obstetricians Participating	Midwives Participating	Total Participants		Projection of Awarded Claims	Projection of Dismissed Claims	Total Cost
2001	676	114	790				
2002	731	130	861				
2003	786	129	915				
2004	841	146	987				
2005	891	134	1,025				
2006	896	139	1,035				
2007	962	151	1,113				
2008	987	157	1,144				
2009	1,044	166	1,210				
2010	1,071	177	1,248		14	5	
2011	1,091	183	1,274		15	12	
2012	1,119	192	1,311		22	24	
2013	1,143	190	1,333		19	19	
2014	1,208	206	1,414		23	26	
2015	1,273	207	1,480				
2016	1,316	216	1,532				

Note: 2016 data is as of 12/5/2016

5 Year Frequency	1.41%	1.31%	

(OB and Midwife data per NICA)

Projected 2016 Counts	22	20	
Approx. % Claims Turner Titled "DA"	33%		(Review of G. Turner Exhibit I)
Estimated # "DA" Claims	7		
Cost per "DA" Claim	113,900		(Per G. Turner Exhibit I, then discounted by 1.1)
Total Cost "DA" Claims	797,297		
Estimated # Serious Claims	15		Projected Total Awarded Claims - Projected DA Claims
Cost per Serious Claim	2,354,607		(See Exhibit 4)
Total Disc. Cost Serious Claims	34,501,798		
Cost per Dismissed Claim		10,000	
Total Discounted Cost (loss and defense)	35,299,095	$201,149	$35,500,244

Overhead	$1,928,367	(2015 Accountant's Report)
Estimated Total 2016 Birth Year Economic Cost	$37,428,611	
2016 Revenue	$26,704,426	
Estimated Shortfall	$10,724,185	

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Development of Awarded Claims with Projection of Ultimate Number of Awarded Claims

DOAH Awarded Claim Counts

Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324
1989																			15	15	15	15	15	15	15	15	15
1990																			10	10	10	10	10	10	10	10	
1991																		8	8	8	8	8	8	8	8		
1992																	14	14	14	14	14	14	14	14			
1993																15	15	15	15	15	15	15	15				
1994														16	16	16	16	16	16	16	16	16					
1995													11	11	11	11	11	11	11	11	11						
1996												16	16	16	17	17	17	17	17	17							
1997											17	17	17	17	17	17	17	17	17								
1998										17	17	17	17	17	17	17	17	17									
1999									18	18	18	18	18	18	18	18	18										
2000								13	13	13	13	13	13	13	13	13											
2001							13	13	13	13	13	13	13	13	13												
2002						18	22	22	22	22	22	22	22	22													
2003				6	9	9	9	9	9	9	9	9	9														
2004				9	9	11	12	13	13	14	14	14															
2005			6	9	10	13	13	13	13	13	13																
2006		3	4	8	11	13	13	13	13	13																	
2007	1	4	7	12	13	14	14	14	14																		
2008	0	2	7	10	11	11	13	13																			
2009	2	5	11	14	15	15	15																				
2010	1	6	8	11	11	11																					
2011	0	0	7	8	10																						
2012	0	2	8	12																							
2013	1	5	8																								
2014	1	5																									
2015	0																										

DOAH Awarded Claim Count Link Ratios

Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
1989																			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1990																			1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1991																		1.000	1.000	1.000	1.000	1.000	1.000	1.000		
1992																	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
1993																1.000	1.000	1.000	1.000	1.000	1.000	1.000				
1994														1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
1995													1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000						
1996												1.000	1.000	1.063	1.000	1.000	1.000	1.000	1.000							
1997											1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
1998										1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
1999									1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000									
2000								1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000										
2001							1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000											
2002						1.222	1.000	1.000	1.000	1.000	1.000	1.000	1.000													
2003				1.500	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
2004				1.000	1.222	1.091	1.083	1.000	1.077	1.000	1.000															
2005			1.500	1.111	1.300	1.000	1.000	1.000	1.000	1.000																
2006		1.333	2.000	1.375	1.182	1.000	1.000	1.000	1.000																	
2007	4.000	1.750	1.714	1.083	1.077	1.000	1.000	1.000																		
2008	-	3.500	1.429	1.100	1.000	1.182	1.000																			
2009	2.500	2.200	1.273	1.071	1.000	1.000																				
2010	6.000	1.333	1.375	1.000	1.000																					
2011	-	-	1.143	1.250																						
2012	-	4.000	1.500																							
2013	5.000	1.600																								
2014	5.000																									

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324
All Time Dollar Weighted Average Link Ratios	4.833	2.222	1.448	1.111	1.128	1.067	1.009	1.000	1.009	1.000	1.000	1.000	1.000	1.008	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected Link	4.833	2.222	1.448	1.111	1.128	1.067	1.009	1.000	1.009	1.000	1.000	1.000	1.000	1.008	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
LDFs	21.357	4.419	1.988	1.373	1.236	1.096	1.026	1.017	1.017	1.008	1.008	1.008	1.008	1.008	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Interpolated LDFs	21.357	4.419	1.988	1.373	1.236	1.096	1.026	1.017	1.017	1.008	1.008	1.008	1.008	1.008	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Awarded To-Date	0	5	8	12	10	11	15	13	14	13	13	14	9	22	13	13	18	17	17	17	11	16	15	14	8	10	15
Initial Estimate Ultimate Awarded Claims	0	22	16	16	12	12	15	13	14	13	13	14	9	22	13	13	18	17	17	17	11	16	15	14	8	10	15
Estimated Future Awarded Claims (per Adjudication Page(3))	21	18	11	10	5	3	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Final Estimate Total Awarded Claims (sum of Current and Future)	21	23	19	22	15	14	18	15	14	13	13	14	9	22	13	13	18	17	17	17	11	16	15	14	8	10	15

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Triangle of Incremental Claims Awarded by DOAH by Birth Year with Annual Award Percentage

Incremental DOAH Awarded Claim Counts

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324
1989																				0	0	0	0	0	0	0	0
1990																			0	0	0	0	0	0	0	0	
1991																		0	0	0	0	0	0	0	0		
1992																	0	0	0	0	0	0	0	0			
1993																0	0	0	0	0	0	0	0				
1994															0	0	0	0	0	0	0	0					
1995														0	0	0	0	0	0	0	0						
1996													0	0	1	0	0	0	0	0							
1997												0	0	0	0	0	0	0	0								
1998											0	0	0	0	0	0	0	0									
1999										0	0	0	0	0	0	0	0										
2000									0	0	0	0	0	0	0	0											
2001								0	0	0	0	0	0	0	0												
2002							4	0	0	0	0	0	0	0													
2003						3	0	0	0	0	0	0	0														
2004					0	2	1	1	0	1	0	0															
2005				3	1	3	0	0	0	0	0																
2006			1	4	3	2	0	0	0	0																	
2007		3	3	5	1	1	0	0	0																		
2008	0	2	5	3	1	0	2	0																			
2009	2	3	6	3	1	0	0																				
2010	1	5	2	3	0	0																					
2011	0	0	7	1	2																						
2012	0	2	6	4																							
2013	1	4	3																								
2014	1	4																									
2015	0																										

Awarded in

2008	2009	2010	2011	2012	2013	2014	2015
14	14	22	18	7	15	14	13

Annual Awarded Percentage

2008	2009	2010	2011	2012	2013	2014	2015
40%	47%	54%	41%	19%	31%	27%	57%

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Development of Adjudicated Claims and Projection of Claims to be Awarded in the Future

DOAH Adjudicated Claim Counts

Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324
1989																				32	32	32	32	32	32	32	32
1990																		39	39	39	39	39	40	40	40	40	
1991																	38	38	38	38	38	38	38	38	38		
1992																48	48	48	48	48	48	48	48	48			
1993															40	40	40	40	40	40	40	40	40				
1994														36	36	36	36	36	36	36	36	36					
1995													26	26	26	26	26	26	26	26	26						
1996												39	39	40	40	40	40	40	40	40							
1997											45	46	46	46	46	47	47	47	47								
1998										41	41	41	41	41	41	41	41	41									
1999									40	40	40	40	40	40	40	40	40										
2000								38	38	38	38	38	38	38	38	38											
2001							39	39	40	40	40	41	41	41	41												
2002						41	50	50	50	50	50	50	50	50													
2003					14	21	21	22	23	23	23	23	23														
2004				15	17	21	23	26	30	31	31	31															
2005			14	22	29	37	38	39	41	41	41																
2006		6	10	17	22	28	32	32	32	32																	
2007	1	5	11	21	26	29	31	34	35																		
2008	0	3	10	20	23	29	35	35																			
2009	2	8	17	26	32	38	39																				
2010	1	10	15	26	32	33																					
2011	0	4	16	27	30																						
2012	0	6	20	28																							
2013	3	8	13																								
2014	1	5																									
2015	0																										

DOAH Adjudicated Claim Count Link Ratios

Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
1989																			1.000	1.000	1.000	1.026	1.000	1.000	1.000	0.000
1990																	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	
1991																1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000		
1992															1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000			
1993														1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000				
1994													1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000					
1995												1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000						
1996											1.022	1.026	1.000	1.000	1.000	1.000	1.000	1.000	1.000							
1997										1.022	1.000	1.000	1.022	1.000	1.000	1.000	1.000	1.000								
1998									1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000									
1999								1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000										
2000							1.000	1.026	1.000	1.000	1.000	1.000	1.000	1.000	1.000											
2001						1.000	1.000	1.026	1.000	1.000	1.025	1.000	1.000	1.000												
2002					1.220	1.000	1.000	1.000	1.000	1.000	1.000	1.000														
2003				1.500	1.000	1.048	1.045	1.000	1.000	1.000	1.000															
2004			1.133	1.235	1.095	1.130	1.154	1.033	1.000	1.000																
2005		1.571	1.318	1.276	1.027	1.026	1.051	1.000	1.000																	
2006		1.667	1.700	1.294	1.273	1.143	1.000	1.000																		
2007	5.000	2.200	1.909	1.238	1.115	1.069	1.097	1.029																		
2008	-	3.333	2.000	1.150	1.261	1.207	1.000																			
2009	4.000	2.125	1.529	1.231	1.188	1.026																				
2010	10.000	1.500	1.733	1.231	1.031																					
2011	-	4.000	1.688	1.111																						
2012	-	3.333	1.400																							
2013	2.667	1.625																								
2014	5.000																									

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324
All Time Dollar Weighted Average Link Ratios	6.125	2.240	1.655	1.213	1.210	1.102	1.030	1.032	1.003	1.000	1.006	1.000	1.000	1.003	1.003	1.000	1.000	1.000	1.000	1.000	1.000	1.005	1.000	1.000	1.000	1.000	1.000
Selected Link	6.125	2.240	1.655	1.213	1.210	1.102	1.030	1.032	1.003	1.000	1.006	1.000	1.000	1.003	1.003	1.000	1.000	1.000	1.000	1.000	1.000	1.005	1.000	1.000	1.000	1.000	1.000
LDFs	39.890	6.513	2.907	1.757	1.449	1.197	1.086	1.055	1.022	1.018	1.018	1.012	1.012	1.012	1.008	1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.000	1.000	1.000	1.000	1.000
Interpolated LDFs	39.890	6.513	2.907	1.757	1.449	1.197	1.086	1.055	1.022	1.018	1.018	1.012	1.012	1.012	1.008	1.005	1.005	1.005	1.005	1.005	1.005	1.005	1.000	1.000	1.000	1.000	1.000
Adjudicated To-Date	0	5	13	28	30	33	39	35	35	32	41	31	23	50	41	38	40	41	47	40	26	36	40	48	38	40	32
Estimated Ultimate Counts	0	33	38	49	43	40	42	37	36	33	42	31	23	51	41	38	40	41	47	40	26	36	40	48	38	40	32
Selected Ultimate Counts (above and page 5)	50	49	43	62	47	41	50	41	36	33	41	31	23	50	41	38	40	42	47	40	26	36	40	48	38	40	32
Implied Adjud. Pattern	0.00%	15.35%	34.39%	56.92%	69.02%	83.53%	92.09%	94.83%	97.88%	98.21%	98.21%	98.85%	98.85%	98.85%	99.17%	99.49%	99.49%	99.49%	99.49%	99.49%	99.49%	99.49%	100.00%	100.00%	100.00%	100.00%	100.00%
Implied Unadjud. Claims	50	44	30	34	17	8	11	6	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Estimated % of Unadjudicated to be Awarded (Page 7)	42.15%	39.82%	36.87%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%	30.00%
Estimated Claims Occurred to be Awarded in the Future	21	18	11	10	5	3	3	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Estimated Claims Occurred to be Dismissed by DOAH in the Future	29	26	19	24	12	5	8	4	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0

Figure is from incremental awarded to Adjudicated page

Note: Above = Unadj. Claims times % to be Awarded

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Triangle of Incremental DOAH Adjudicated Claims

Incremental DOAH Adjudicated Claim Counts

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324
1989																			0	0	0	0	0	0	0	0	0
1990																		0	0	0	0	0	1	0	0	0	
1991																	0	0	0	0	0	0	0	0	0		
1992																0	0	0	0	0	0	0	0	0			
1993															0	0	0	0	0	0	0	0	0				
1994														0	0	0	0	0	0	0	0	0					
1995													0	0	0	0	0	0	0	0	0						
1996												0	0	0	1	0	0	0	0	0							
1997											0	1	0	0	0	1	0	0	0								
1998										0	0	0	0	0	0	0	0	0									
1999									0	0	0	0	0	0	0	0	0										
2000								0	0	0	0	0	0	0	0	0											
2001							0	0	1	0	0	1	0	0	0												
2002						0	9	0	0	0	0	0	0	0													
2003					0	7	0	1	1	0	0	0	0														
2004				0	2	4	2	3	4	1	0	0															
2005			0	8	7	8	1	1	2	0	0																
2006		0	4	7	5	6	4	0	0	0																	
2007	0	4	6	10	5	3	2	3	1																		
2008	0	3	7	10	3	6	6	0																			
2009	2	6	9	9	6	6	1																				
2010	1	9	5	11	6	1																					
2011	0	4	12	11	3																						
2012	0	6	14	8																							
2013	3	5	5																								
2014	1	4																									
2015	0																										

Adjudicated in

2008	2009	2010	2011	2012	2013	2014	2015
35	30	41	44	36	49	52	23

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Development and Estimation of Ultimate Number of All Claims by Birth Year

Reported Claim Counts

Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324
1989																			32	32	32	32	32	32	32	32	32
1990																		39	39	39	39	40	40	40	40	40	
1991																	38	38	38	38	38	38	38	38	38		
1992																48	48	48	48	48	48	48	48	48			
1993															40	40	40	40	40	40	40	40	40				
1994														36	36	36	36	36	36	36	36	36					
1995													26	26	26	26	26	26	26	26	26						
1996												40	40	40	40	40	40	40	40	40							
1997											47	47	47	47	47	47	47	47	47								
1998										42	42	42	42	42	42	42	42	42									
1999									40	40	40	40	40	40	40	40	40										
2000								38	38	38	38	38	38	38	38	38											
2001							41	41	41	41	41	41	41	41	41												
2002						50	50	50	50	50	50	50	50														
2003					18	21	21	23	23	23	23	23	23														
2004				20	23	29	30	30	31	31	31	31															
2005			21	30	35	39	40	41	41	41	41																
2006		9	16	24	28	32	32	32	33	33																	
2007	4	12	22	26	31	32	33	36	36																		
2008	1	9	18	24	29	37	37	41																			
2009	5	15	26	34	39	47	48																				
2010	4	13	25	32	36	39																					
2011	6	14	24	37	38																						
2012	5	17	36	44																							
2013	5	12	23																								
2014	2	14																									
2015	0																										

Reported Claim Count Link Ratios

Year	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
1989																			1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
1990																		1.000	1.000	1.000	1.026	1.000	1.000	1.000	1.000	
1991																	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
1992																1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
1993															1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
1994														1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
1995													1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
1996												1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000						
1997											1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000							
1998										1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
1999									1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000									
2000								1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000										
2001							1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000											
2002						1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000													
2003					1.167	1.000	1.095	1.000	1.000	1.000	1.000	1.000														
2004				1.150	1.261	1.034	1.000	1.033	1.000	1.000	1.000															
2005			1.429	1.167	1.114	1.026	1.025	1.000	1.000	1.000																
2006		1.778	1.500	1.167	1.143	1.000	1.000	1.031	1.000																	
2007	3.000	1.833	1.182	1.192	1.032	1.031	1.091	1.000																		
2008	9.000	2.000	1.333	1.208	1.276	1.000	1.108																			
2009	3.000	1.733	1.308	1.147	1.205	1.021																				
2010	3.250	1.923	1.280	1.125	1.083																					
2011	2.333	1.714	1.542	1.027																						
2012	3.400	2.118	1.222																							
2013	2.400	1.917																								
2014	7.000																									

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	Total
All Time Dollar Weighted Average Link Ratios	3.313	1.881	1.335	1.141	1.155	1.014	1.035	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.004	1.000	1.000	1.000	1.000	1.000	
Selected Link	3.313	1.881	1.335	1.141	1.155	1.014	1.035	1.007	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.004	1.000	1.000	1.000	1.000	1.000	
LDFs	11.635	3.512	1.867	1.398	1.226	1.061	1.047	1.011	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.000	1.000	1.000	1.000	1.000	
Interpolated LDFs	11.635	3.512	1.867	1.398	1.226	1.061	1.047	1.011	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.004	1.000	1.000	1.000	1.000	1.000	
Reported To-Date	0	14	23	44	38	39	48	41	36	33	41	31	23	50	41	38	40	42	47	40	26	36	40	48	38	40	937
Estimated Ultimate Counts	0	49	43	62	47	41	50	41	36	33	41	31	23	50	41	38	40	42	47	40	26	36	40	48	38	40	1025
Estimated Ultimate Counts	50	49	43	62	47	41	50	41	36	33	41	31	23	50	41	38	40	42	47	40	26	36	40	48	38	40	1075
Reporting Pattern	0.00%	28.47%	53.56%	71.51%	81.59%	94.22%	95.53%	98.89%	99.57%	99.57%	99.57%	99.57%	99.57%	99.57%	99.57%	99.57%	99.57%	99.57%	99.57%	99.57%	99.57%	100.00%	100.00%	100.00%	100.00%	100.00%	

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Triangle of Incremental Reported Claims

Incremental Reported Claim Counts

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324
1989																			0	0	0	0	0	0	0	0	0
1990																		0	0	0	0	1	0	0	0	0	
1991																	0	0	0	0	0	0	0	0	0		
1992																0	0	0	0	0	0	0	0	0			
1993															0	0	0	0	0	0	0	0	0				
1994														0	0	0	0	0	0	0	0	0					
1995													0	0	0	0	0	0	0	0	0						
1996												0	0	0	0	0	0	0	0	0							
1997											0	0	0	0	0	0	0	0	0								
1998										0	0	0	0	0	0	0	0	0									
1999									0	0	0	0	0	0	0	0	0										
2000								0	0	0	0	0	0	0	0	0											
2001							0	0	0	0	0	0	0	0	0												
2002						0	0	0	0	0	0	0	0	0													
2003					0	3	0	2	0	0	0	0	0														
2004				0	3	6	1	0	1	0	0	0															
2005			0	9	5	4	1	1	0	0	0																
2006		0	7	8	4	4	0	0	1	0																	
2007	0	8	10	4	5	1	1	3	0																		
2008	1	8	9	6	5	8	0	4																			
2009	5	10	11	8	5	8	1																				
2010	4	9	12	7	4	3																					
2011	6	8	10	13	1																						
2012	5	12	19	8																							
2013	5	7	11																								
2014	2	12																									
2015	0																										

Reported in

2008	2009	2010	2011	2012	2013	2014	2015
31	42	38	43	41	48	57	40

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Percentage of Claims Adjudicated that Result in Awards with Projected Award Ratios for Claims Remaining at Various Stages

DOAH Incremental Awarded to Incremental Adjudicated Percentage

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324
1989																					-	-	-	-	-	-	-
1990																				-	-	-	0.0%	-	-	-	
1991																-	-	-	-	-	-	-	-	-	-		
1992																		-	-	-	-	-	-	-	-	-	
1993																-	-	-	-	-	-	-	-	-	-		
1994																-	-	-	-	-	-	-	-				
1995															-	-	-	-	-	-	-	-					
1996														-	100.0%	-	-	-	-	-	-						
1997												0.0%	-	-	-	0.0%	-	-	-								
1998											-	-	-	-	-	-	-	-									
1999										-	-	-	-	-	-	-	-										
2000									-	-	-	-	-	-	-	-											
2001								-	0.0%	-	-	0.0%	-	-													
2002							44.4%	-	-	-	-	-	-	-													
2003						42.9%	-	0.0%	0.0%	-	-	-	-														
2004						50.0%	50.0%	33.3%	0.0%	100.0%	-	-															
2005				37.5%	14.3%	37.5%	0.0%	0.0%	0.0%	-	-																
2006			25.0%	57.1%	60.0%	33.3%	0.0%	-	-	-																	
2007		75.0%	50.0%	50.0%	20.0%	33.3%	0.0%	0.0%	0.0%																		
2008	-	66.7%	71.4%	30.0%	33.3%	0.0%	33.3%	-																			
2009	100.0%	50.0%	66.7%	33.3%	16.7%	0.0%	0.0%																				
2010	100.0%	55.6%	40.0%	27.3%	0.0%	0.0%																					
2011	-	0.0%	58.3%	9.1%	66.7%																						
2012	-	33.3%	42.9%	50.0%																							
2013	33.3%	80.0%	60.0%																								
2014	100.0%	100.0%																									
2015	-																										

| **All Time** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Weighted Avg. Ratio** | 0.750 | 0.561 | 0.532 | 0.351 | 0.243 | 0.268 | 0.280 | 0.125 | 0.000 | 1.000 | - | 0.000 | - | - | 1.000 | 0.000 | - | - | - | - | - | - | 0.000 | - | - | - | - |

| **Three Stage Centered Average** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 59% | 50% | 41% | 29% | 4% | 24% | 19% | 11% | - | | | | | | | | | | | | | | | | | |

| **Selected Incre. Award Ratio** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 60% | 55% | 50% | 50% | 30% | 30% | 30% | 30% | 30% | 30% | | | | | | | | | | | | | | | | | |

| **Weighted Award Ratio for All Remaining Claims** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 0.422 | 0.398 | 0.369 | 0.300 | 0.300 | 0.300 | 0.300 | 0.300 | 0.300 | 0.300 | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% | 30.00% |

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Cumulative Ratios of Percentage of Adjudicated Claims Resulting in Award

DOAH Cumulative Awarded to Cumulative Adjudicated Percentage

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324
1989																			46.9%	46.9%	46.9%	46.9%	46.9%	46.9%	46.9%	46.9%	46.9%
1990																		25.6%	25.6%	25.6%	25.6%	25.6%	25.0%	25.0%	25.0%	25.0%	
1991																	21.1%	21.1%	21.1%	21.1%	21.1%	21.1%	21.1%	21.1%	21.1%		
1992																29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%	29.2%			
1993															37.5%	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%	37.5%				
1994														44.4%	44.4%	44.4%	44.4%	44.4%	44.4%	44.4%	44.4%	44.4%					
1995													42.3%	42.3%	42.3%	42.3%	42.3%	42.3%	42.3%	42.3%	42.3%						
1996												41.0%	41.0%	41.0%	42.5%	42.5%	42.5%	42.5%	42.5%	42.5%							
1997											37.8%	37.0%	37.0%	37.0%	37.0%	36.2%	36.2%	36.2%	36.2%								
1998										41.5%	41.5%	41.5%	41.5%	41.5%	41.5%	41.5%	41.5%	41.5%									
1999									45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%										
2000								34.2%	34.2%	34.2%	34.2%	34.2%	34.2%	34.2%	34.2%	34.2%											
2001							33.3%	33.3%	32.5%	32.5%	32.5%	31.7%	31.7%	31.7%	31.7%												
2002						43.9%	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%	44.0%													
2003					42.9%	42.9%	42.9%	40.9%	39.1%	39.1%	39.1%	39.1%	39.1%														
2004				60.0%	52.9%	52.4%	52.2%	50.0%	43.3%	45.2%	45.2%	45.2%															
2005			42.9%	40.9%	34.5%	35.1%	34.2%	33.3%	31.7%	31.7%	31.7%																
2006		50.0%	40.0%	47.1%	50.0%	46.4%	40.6%	40.6%	40.6%	40.6%																	
2007	100.0%	80.0%	63.6%	57.1%	50.0%	48.3%	45.2%	41.2%	40.0%																		
2008	-	66.7%	70.0%	50.0%	47.8%	37.9%	37.1%	37.1%																			
2009	100.0%	62.5%	64.7%	53.8%	46.9%	39.5%	38.5%																				
2010	100.0%	60.0%	53.3%	42.3%	34.4%	33.3%																					
2011	-	0.0%	43.8%	29.6%	33.3%																						
2012	-	33.3%	40.0%	42.9%																							
2013	33.3%	62.5%	61.5%																								
2014	100.0%	100.0%																									
2015	-																										
All Time Weighted Avg. Ratio	0.750	0.540	0.513	0.466	0.441	0.426	0.405	0.393	0.388	0.391	0.399	0.393	0.396	0.394	0.404	0.393	0.364	0.344	0.355	0.344	0.335	0.315	0.297	0.300	0.347	0.469	0.469

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Development of Dismissed Claims

DOAH Dismissed Claim Counts

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312	324
1989																			17	17	17	17	17	17	17	17	17
1990																	29	29	29	29	29	29	30	30	30	30	
1991																30	30	30	30	30	30	30	30	30	30		
1992															34	34	34	34	34	34	34	34	34	34			
1993														25	25	25	25	25	25	25	25	25	25				
1994													20	20	20	20	20	20	20	20	20	20					
1995												15	15	15	15	15	15	15	15	15							
1996											23	23	23	23	23	23	23	23	23								
1997										28	29	29	29	29	30	30	30	30									
1998									24	24	24	24	24	24	24	24	24										
1999								22	22	22	22	22	22	22	22	22											
2000							25	25	25	25	25	25	25	25	25												
2001						26	27	27	27	27	28	28	28	28													
2002					23	28	28	28	28	28	28	28	28														
2003				8	12	12	13	14	14	14	14	14															
2004			6	8	10	11	13	17	17	17	17																
2005		8	13	19	24	25	26	28	28	28																	
2006	3	6	9	11	15	19	19	19	19																		
2007	0	1	4	9	13	15	17	20	21																		
2008	0	1	3	10	12	18	22	22																			
2009	0	3	6	12	17	23	24																				
2010	0	4	7	15	21	22																					
2011	0	4	9	19	20																						
2012	0	4	12	16																							
2013	2	3	5																								
2014	0	0																									
2015	0																										

DOAH Dismissed Claim Count Link Ratios

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
1989																				1.000	1.000	1.000	1.000	1.000	1.000	1.000
1990																			1.000	1.000	1.000	1.000	1.034	1.000	1.000	1.000
1991																		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
1992																	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
1993																1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
1994															1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
1995														1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000					
1996													1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000						
1997												1.036	1.000	1.000	1.000	1.034	1.000	1.000	1.000							
1998											1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000								
1999										1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000									
2000									1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000										
2001								1.038	1.000	1.000	1.000	1.037	1.000	1.000	1.000											
2002							1.217	1.000	1.000	1.000	1.000	1.000	1.000	1.000												
2003						1.500	1.000	1.083	1.077	1.000	1.000	1.000	1.000													
2004					1.333	1.250	1.100	1.182	1.308	1.000	1.000	1.000														
2005				1.625	1.462	1.263	1.042	1.040	1.077	1.000	1.000															
2006			2.000	1.500	1.222	1.364	1.267	1.000	1.000	1.000																
2007			4.000	2.250	1.444	1.154	1.133	1.176	1.050																	
2008		-	3.000	3.333	1.200	1.500	1.222	1.000																		
2009		-	2.000	2.000	1.417	1.353	1.043																			
2010		-	1.750	2.143	1.400	1.048																				
2011		-	2.250	2.111	1.053																					
2012		-	3.000	1.333																						
2013		1.500	1.667																							
2014		-																								

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
All Time Dollar Weighted Average Link Ratios	10.000	2.261	1.873	1.301	1.275	1.129	1.044	1.053	1.000	1.000	1.011	1.000	1.000	1.000	1.005	1.000	1.000	1.000	1.000	1.029	1.029	1.033	1.031	1.033	1.035	1.036
Selected Link	10.000	2.261	1.873	1.301	1.275	1.129	1.044	1.053	1.000	1.000	1.011	1.000	1.000	1.000	1.005	1.000	1.000	1.000	1.000	1.029	1.029	1.033	1.031	1.033	1.033	1.000
LDFs	103.179	10.318	4.564	2.437	1.873	1.469	1.301	1.247	1.184	1.184	1.184	1.172	1.172	1.172	1.172	1.165	1.165	1.165	1.165	1.165	1.132	1.100	1.065	1.033	1.000	0.000
Interpolated LDFs	103.179	10.318	4.564	2.437	1.873	1.469	1.301	1.247	1.184	1.184	1.184	1.172	1.172	1.172	1.172	1.165	1.165	1.165	1.165	1.165	1.132	1.100	1.065	1.033	1.000	0.000
Reported To-Date	0	0	5	16	20	22	24	22	21	19	28	17	14	28	28	25	22	24	30	23	15	20	25	34	30	30
Estimated Ultimate Dismissed Counts	0	0	23	39	37	32	31	27	25	22	33	20	16	33	33	29	26	28	35	27	17	22	27	35	30	30
Selected Ultimate Dismissed Counts (this test)	35	35	23	39	37	32	31	27	25	22	33	20	16	33	33	29	26	28	35	27	17	22	27	35	30	30

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Incremental Dismissed Claims and Annual Percentage of Adjudicated Claims that are Dismissed

Incremental DOAH Dismissed Claim Counts

	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
1989																				0	0	0	0	0	0	0
1990																				0	0	0	0	1	0	0
1991																			0	0	0	0	0	0	0	
1992																		0	0	0	0	0	0	0		
1993																	0	0	0	0	0	0	0			
1994																0	0	0	0	0	0	0				
1995															0	0	0	0	0	0	0					
1996														0	0	0	0	0	0	0						
1997												1	0	0	0	1	0	0	0							
1998											0	0	0	0	0	0	0	0								
1999										0	0	0	0	0	0	0	0									
2000									0	0	0	0	0	0	0	0										
2001								0	1	0	0	1	0	0	0											
2002							5	0	0	0	0	0	0	0												
2003							4	0	1	1	0	0	0													
2004					2	2	1	2	4	0	0	0														
2005				5	6	5	1	1	2	0	0															
2006			3	3	2	4	4	0	0	0																
2007		1	3	5	4	2	2	3	1																	
2008	0	1	2	7	2	6	4	0																		
2009	0	3	3	6	5	6	1																			
2010	0	4	3	8	6	1																				
2011	0	4	5	10	1																					
2012	0	4	8	4																						
2013	2	1	2																							
2014	0	0																								
2015	0																									

Dismissed in

2008	2009	2010	2011	2012	2013	2014	2015
21	16	19	26	29	34	38	10

Annual Dismissed Percentage

2008	2009	2010	2011	2012	2013	2014	2015
60%	53%	46%	59%	81%	69%	73%	43%

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Anticipated Average Payout Pattern of Claims Paying in the Future (Future Awarded and Pipeline) (with Defense Cost Shown)
(in 2016 $$$)

	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Loss Payout	$81,276	94,064	81,622	83,442	84,598	88,990	90,126	91,416	97,116	$99,918
Defense	$12,000									
Total Payout	$93,276	94,064	81,622	83,442	84,598	88,990	90,126	91,416	97,116	$99,918

	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Total Payout	$101,250	102,601	102,675	104,300	106,655	109,044	109,565	114,691	117,241	$122,577

	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046
Total Payout	$127,977	134,931	138,853	135,983	139,089	135,380	132,562	129,355	123,399	$121,339

	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056
Total Payout	$115,907	112,035	107,218	98,830	94,107	87,078	83,886	77,179	74,432	$71,430

	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066
Total Payout	$67,408	63,800	62,191	59,023	53,747	52,352	50,775	49,286	46,662	$42,616

	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076
Total Payout	$40,691	35,823	30,256	26,337	23,780	19,660	14,835	10,677	8,669	$7,838

	2077	2078
Total Payout	$6,733	5,783

Discounted and inflation corrected to 12/31/2015 at	2.00% Inflation and	5.00% investment return.	$2,423,861
(Rates are from Exhibit 10)			
For 2016 birth year claims projected to begin in 2018			$2,354,607
Average inflation and discount effect			48%

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Defense Incurred Per To 9/30/2014 and 9/30/2014-2015 Awarded Claims

	(1) Data	(2) Data	(3) (1)/(2)	(4) Data	(5) Data	(6) ((4)-(1))/((5)-(2))
Birth Year	Incurred Defense on Awarded at 9/30/2014	Claims Awarded at 9/30/2014	Average Incurred Defense on Awarded at 9/30/2014	Incurred Defense on Awarded at 12/31/2015	Claims Awarded at 12/31/2015	Total Incremental Defense Incurred 9/30/2014 - 12/31/2015
1989	$718,909	15	$47,927	$715,650	15	-
1990	83,918	10	8,392	$ 70,000	10	-
1991	1,023,321	8	127,915	$ 1,018,807	8	-
1992	276,454	14	19,747	$ 259,927	14	-
1993	270,358	15	18,024	$ 257,042	15	-
1994	242,400	16	15,150	$ 237,476	16	-
1995	953,365	11	86,670	$ 1,100,559	11	-
1996	220,501	17	12,971	$ 218,652	17	-
1997	1,226,196	17	72,129	$ 1,225,468	17	-
1998	407,713	17	23,983	$ 394,009	17	-
1999	283,051	18	15,725	$ 279,341	18	-
2000	142,714	13	10,978	$ 135,601	13	-
2001	193,551	13	14,889	$ 193,581	13	-
2002	335,296	22	15,241	$ 340,837	22	-
2003	139,685	9	15,521	$ 140,185	9	-
2004	295,005	14	21,072	$ 296,319	14	-
2005	151,024	13	11,617	$ 151,153	13	-
2006	161,265	13	12,405	$ 161,460	13	-
2007	150,006	14	10,715	$ 152,625	14	-
2008	126,495	12	10,541	$ 130,847	13	4,352
2009	46,716	14	3,337	$ 88,663	16	20,974
2010	52,061	11	4,733	$ 99,043	13	23,491
2011	24,033	8	3,004	$ 144,346	13	24,063
2012	52,726	6	8,788	$ 46,021	13	(958)
2013	5,875	2	2,938	$ 76,900	9	10,146
2014			-	$ 28,978	5	5,796
Total	$7,582,638	322		$7,963,492	351	
Average			$23,548.57			$13,133

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OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Defense Paid Per To 9/30/2014 and 9/30/2014-2015 Awarded Claims

	(1) Data	(2) Data	(3) (1)/(2)	(4) Data	(5) Data	(6) ((4)-(1))/((5)-(2))
Birth Year	Paid Defense on Awarded at 9/30/2014	Claims Awarded at 9/30/2014	Average Paid Defense on Awarded at 9/30/2014	Paid Defense on Awarded at 12/31/15	Claims Awarded at 12/31/15	Total Incremental Defense Paid 9/30/2014 - 12/31/15
1989	$ 713,830	15	$ 47,589	$ 715,650	15	-
1990	$ 67,975	10	$ 6,797	$ 69,996	10	-
1991	$ 1,018,518	8	$ 127,315	$ 1,018,627	8	-
1992	$ 245,555	14	$ 17,540	$ 248,526	14	-
1993	$ 256,871	15	$ 17,125	$ 257,039	15	-
1994	$ 237,243	16	$ 14,828	$ 237,476	16	-
1995	$ 935,365	11	$ 85,033	$ 1,070,559	11	-
1996	$ 218,634	17	$ 12,861	$ 218,652	17	-
1997	$ 1,215,365	17	$ 71,492	$ 1,215,467	17	-
1998	$ 388,926	17	$ 22,878	$ 394,003	17	-
1999	$ 279,149	18	$ 15,508	$ 279,338	18	-
2000	$ 134,726	13	$ 10,364	$ 135,601	13	-
2001	$ 193,551	13	$ 14,889	$ 193,581	13	-
2002	$ 340,427	22	$ 15,474	$ 340,835	22	-
2003	$ 139,685	9	$ 15,521	$ 139,685	9	-
2004	$ 295,055	14	$ 21,075	$ 295,303	14	-
2005	$ 151,024	13	$ 11,617	$ 151,129	13	-
2006	$ 152,705	13	$ 11,747	$ 153,097	13	-
2007	$ 150,006	14	$ 10,715	$ 152,334	14	-
2008	$ 126,982	12	$ 10,582	$ 130,761	13	3,778
2009	$ 41,716	14	$ 2,980	$ 72,020	16	15,152
2010	$ 52,061	11	$ 4,733	$ 58,934	13	3,437
2011	$ 24,283	8	$ 3,035	$ 93,086	13	13,761
2012	$ 25,606	6	$ 4,268	$ 43,021	13	2,488
2013	$ 5,875	2	$ 2,938	$ 41,007	9	5,019
2014			-	$ 17,978	5	3,596
Total	$ 7,411,134	322		$ 7,743,704	351	
Average			$23,015.94			$11,468

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Defense Incurred Per To 9/30/2014 and 9/30/2014-2015 Dismissed Claims

	(1) Data	(2) Data	(3) (1)/(2)	(4) Data	(5) Data	(6) ((4)-(1))/((5)-(2))
Birth Year	Incurred Defense on Dismissed at 9/30/2014	Claims Dismissed at 9/30/2014	Average Incurred Defense on Dismissed at 9/30/2014	Incurred Defense on Dismissed at 12/31/2015	Claims Dismissed at 12/31/2015	Total Incremental Defense Incurred 9/30/2014 - 12/31/2015
1989	$ 249,832	17	$ 14,696	$ 249,832	17	-
1990	$ 172,003	30	$ 5,733	$ 172,003	30	-
1991	$ 222,488	30	$ 7,416	$ 222,488	30	-
1992	$ 225,709	34	$ 6,638	$ 225,709	34	-
1993	$ 180,550	25	$ 7,222	$ 180,550	25	-
1994	$ 156,347	20	$ 7,817	$ 156,347	20	-
1995	$ 153,545	15	$ 10,236	$ 153,545	15	-
1996	$ 167,583	23	$ 7,286	$ 167,583	23	-
1997	$ 586,236	30	$ 19,541	$ 586,503	30	-
1998	$ 281,389	24	$ 11,725	$ 281,389	24	-
1999	$ 267,044	22	$ 12,138	$ 267,044	22	-
2000	$ 343,523	25	$ 13,741	$ 343,523	25	-
2001	$ 866,914	28	$ 30,961	$ 867,501	28	-
2002	$ 495,825	28	$ 17,708	$ 495,958	28	-
2003	$ 109,317	14	$ 7,808	$ 109,401	14	-
2004	$ 274,126	17	$ 16,125	$ 274,282	17	-
2005	$ 256,517	28	$ 9,161	$ 256,778	28	-
2006	$ 297,667	19	$ 15,667	$ 297,794	19	-
2007	$ 205,068	19	$ 10,793	$ 207,168	21	1,050
2008	$ 261,585	21	$ 12,456	$ 266,464	22	4,879
2009	$ 167,669	22	$ 7,621	$ 218,427	24	25,379
2010	$ 140,521	20	$ 7,026	$ 167,701	23	9,060
2011	$ 144,937	15	$ 9,662	$ 216,204	21	11,878
2012	$ 45,747	11	$ 4,159	$ 75,899	20	3,350
2013	$ 587	3	$ 196	$ 74,956	8	14,874
2014			$ -	$ 22,326	3	7,442
Total	$ 6,272,729	540		$ 6,557,376	571	
Average			$11,616			$9,182

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Defense Paid Per To 9/30/2014 and 9/30/2014-2015 Dismissed Claims

	(1) Data	(2) Data	(3) (1)/(2)	(4) Data	(5) Data	(6) ((4)-(1))/((5)-(2))
Birth Year	Paid Defense on Dismissed at 9/30/2014	Claims Dismissed at 9/30/2014	Average Paid Defense on Dismissed at 9/30/2014	Paid Defense on Dismissed at 12/31/2015	Claims Dismissed at 12/31/2015	Total Incremental Defense Paid 9/30/2014 - 12/31/15
1989	$249,832	17	$14,696	$249,832	17	-
1990	172,003	30	5,733	172,003	30	-
1991	222,488	30	7,416	222,488	30	-
1992	225,709	34	6,638	225,709	34	-
1993	180,550	25	7,222	180,550	25	-
1994	156,347	20	7,817	156,347	20	-
1995	153,545	15	10,236	153,545	15	-
1996	167,583	23	7,286	167,583	23	-
1997	586,236	30	19,541	586,503	30	-
1998	281,389	24	11,725	281,389	24	-
1999	267,044	22	12,138	267,044	22	-
2000	343,523	25	13,741	343,523	25	-
2001	866,914	28	30,961	867,106	28	-
2002	495,825	28	17,708	495,918	28	-
2003	109,317	14	7,808	109,361	14	-
2004	274,126	17	16,125	274,242	17	-
2005	256,517	28	9,161	256,658	28	-
2006	297,667	19	15,667	297,714	19	-
2007	205,068	19	10,793	207,128	21	1,030
2008	261,585	21	12,456	266,384	22	4,799
2009	167,669	22	7,621	218,347	24	25,339
2010	112,685	20	5,634	127,551	23	4,955
2011	132,685	15	8,846	176,708	21	7,337
2012	43,041	11	3,913	72,859	20	3,313
2013	587	3	196	39,023	8	7,687
2014			-	11,326	3	3,775
Total	$6,229,934	540		$6,426,841	571	
Average			$11,537			$6,352

Exhibit 6 - Reinsurance Recoverables

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Computation of Estimated Reinsurance Recoveries for 2016 and Prior Birth Year Claims at 12/31/2015

Total $15,374,478

George Turner Estimate of $15,374,478 accepted

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Computation of Variance of Possible Eventual Costs of NICA Unpaid as of 12/31/2015 for 2016 and Prior Claims

	Calculations	Variance	Source
1. Variance of Costs of Awarded and Evaluated (worksheet) Claims			
a. Assumed coefficient of variation of a single lifespan	40%		Data
b. Number of such claims	179		Data
c. (=a./square root of b.) Coeffient of variation of all such claims	3%		
d. Discounted reserve for such claims	$465,154,302		Summary Page 1
e. ((c.*d.)^2) Estimated variance in this component		193,402,032,837,138	
2. Variance of to be Awarded and Pipeline Claims Costs for 2015 and Prior Years (Serious Claims only)			
a. Average squared claim size (2016 dollars)	$30,498,447,391,431		Computed
b. Expected number of such claims	49		Summary Page 1
(=a.*b.) Estimated variance in 2016 dollars	1,491,679,061,914,900		
d. Average inflation and discount factor	48%		Exhibit 4
e. (=c.*d.*d.) Estimated process variance in this component	348,445,484,914,167		
f. % of 2015 claims costs that arise from unpaid costs on claims used to compute average	66%		Data
g. Assumed coefficient of variation of a single lifespan	40%		Data
h. Number of claims averaged in estimating average cost (1.b.)	179		Data
i. (=f.*g./square root of h.)Coefficient of variation of projected average payout	2%		
j. Discounted reserve for such claims	$118,551,023		Summary Page 1
k. (=(i.*j.)^2)Parameter variance for this class	5,498,825,362,397		
l. (=e.+k.) Estimated variance in this component		353,944,310,276,564	
3. Variance of 2016 Claims Costs (Serious Claims only)			
a. Average squared claim size (2016 dollars)	30,498,447,391,431		Data
b. Expected number of such claims	15		Exhibit 2
c. (=a.*b.) Estimated variance in 2014 dollars	446,890,319,710,065		
d. Average inflation and discount factor	47%		Exhibit 4
e. (=c.*d.*d.) Estimated process variance in this component	98,510,413,114,063		
f. % of 2014 claims costs that arise from unpaid costs on claims used to compute average	66%		Data
g. Assumed coefficient of variation of a single lifespan	40%		Data
h. Number of claims averaged	179		Data
i. (=f.*g./square root of h.)Coefficient of variation of projected average payout	1.98%		
j. Discounted reserve for such claims	$35,500,244		Summary Page 1
k. (=(i.*j.)^2)Parameter variance for this class	493,085,219,631		
l. Variance of counts used in projecting frequency (number of projected counts per Poisson)	15		Data
m. (=l. /5.0) Parameter variance of expected counts	2.930577508		
n. Square of average discounted severity of claim used	5,544,176,292,329		Data
o. (=m.*n.) Addition for count parameter variance	16,247,638,340,462		
p. (=e.+k.+o.) Estimated variance in this component		115,251,136,674,155	
4. Variance Due to Inflation and Interest Uncertainty			
a. Best estimate of net reserve	$617,690,523		Summary Page 1
b. Coefficient of Variation from interest rate simulation	63%		Exhibit 8
c. (=(a.*b.)^2) Variance due investment and inflation uncertainty		151,433,853,906,529,000	
5. a. (=1.e.+2.l.+3.p.+4.c.) Total Variance		152,096,451,386,316,000	
b. (=square root of a.) Standard Deviation of 2016 and Prior Discounted Costs		$389,995,450	
6. a. (=1.e+2.l+[4.b*(4.a-3.j)]^2) Variance of Just 2015 and Prior Costs		135,074,823,677,562,000	
b. (=square root of a.) Standard Deviation of 2015 and Prior Discounted Costs		$367,525,269	

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Estimate of Variance and Coefficient of Variation of Effects of Varying Interest and Inflation

Results of Simulation of 200 Future Interest Rate Path Scenarios

1.	Arithmetic Mean Discount Factor	80%
2.	Geometric Mean Discount Factor	69%
3.	Variance of Discount Factor	0.2523065
4.	(= (3.)^2) Standard Deviation of Discount Factor	0.502
5.	Coefficient of Variation of Discount Factor	63%

Notes: The stochastic simulations reflect 1.5 fewer years of inflation than the calculations elsewhere in this study.
Since only the coefficient of variation is carried to other exhibits, that does not introduce material bias.
The arithmetic mean is significantly higher than the best estimate discount factor, while the geometric mean
is reasonably close to the discount/inflation factor selected in the study.
That is perceived to be a result of the heavily skewed distribution of interest rate paths.
Decision was made to accept existing best estimate factor, implicting assigning less weight to mean because
of skew.
It was nonetheless used in computing the coefficient of variantion since the skew was so heavily associated
with the variance.

OIR Analysis of Neurological Injury Compensation Association 2016 and Prior Year Reserves at 12/31/2015

Anticipated Average Payout Pattern of Total Pre-Reinsurance Liabilities Including 2016 Birth Year
(in 2016 $$$)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Total Payout	$29,654,627	22,948,131	29,901,329	29,630,180	29,919,169	28,623,043	29,330,409	29,568,271	29,890,105	$30,559,004

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Total Payout	$29,212,678	29,863,585	30,304,871	30,482,848	30,873,099	28,842,730	29,175,494	29,580,947	29,928,468	$28,494,766

	2036	2,037	2,038	2,039	2,040	2,041	2042	2,043	2,044	2045
Total Payout	$26,320,232	26,669,132	27,142,406	27,565,729	27,475,679	25,723,834	25,446,009	25,253,832	24,217,779	$19,583,882

	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055
Total Payout	$17,401,347	16,732,944	16,463,962	16,171,595	15,690,768	14,922,142	14,509,151	14,056,145	9,771,597	$9,101,340

	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065
Total Payout	$8,420,566	7,932,000	7,696,570	7,564,988	6,953,429	6,611,115	6,465,581	6,368,019	4,628,252	$4,123,634

	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075
Total Payout	$2,964,629	2,811,174	2,544,874	2,201,279	1,927,985	1,661,018	1,422,051	1,125,657	739,581	$580,451

	2076	2077	2078
Total Payout	$510,390	444,179	381,528

Discounted and inflation corrected to 12/31/2015 at   2.0% Inflation and   5.0% investment return. $633,065,001
          (Interest and Inflation on ULAE removed-Although it was included in present value variance simulation)
(Rates are from Exhibit 10)
Average inflation and discount effect   59%

OIR Secondary Analysis of Neurological Injury Compensation Association 2016 Costs
Evaluation of Net (After Inflation) Investment Earning Rates and Volatility Using Historical Earnings of NICA - Including Computation of Reference Data

Calendar Year Ending 6/30 of	(1) (2) Previous Beginning Assets	(2) Data Balance Sheets Ending Assets	(3) Data Inc. Statements Interest Revenue	(4) Data Inc. Statements Investment Fees	(5) (3)-(4) Net Invest. Revenue	(6) (5)/(avg((1),(2)) Net Return	(7) Data Yahoo.com NYSE Index 7/1	(8) (7)/prev(7) NYSE 7/1 to 7/1 Return	(9) Data Yahoo.com 3 Month T-Bill Rate	(10) (6)-(9) Excess Returns of NICA	(11) (8)-(9) Excess Returns of NYSE	(12) Data BLS Consumer CPI-U Increase	(13) [(1.0+(6))/(1.0-(12))]-1.0 NICA Excess Return over CPI	(14) [(13)-avg(13) -prev(13)]^2 Year-to-Year Volatility	(15) (solver) Vol. Given 0.82701395 Mean Revert
1995		148,069,099	7,470,376	165,357	7,305,019		3,186.08		5.42%			2.8%			
1996	148,069,099	172,114,339	9,280,952	195,214	9,085,738	5.5%	3,623.62	13.7%	5.18%	0.10%	8.31%	3.0%	2.4%		
1997	172,114,339	196,021,773	10,240,629	223,016	10,017,613	5.3%	5,228.71	44.3%	5.10%	0.12%	39.12%	2.3%	2.9%	2.35607E-05	3.96637E-06
1998	196,021,773	224,280,943	14,797,538	346,602	14,450,936	6.6%	5,977.01	14.3%	4.95%	1.55%	9.21%	1.6%	5.0%	0.000415188	0.001990407
1999	224,280,943	259,753,054	14,729,889	634,437	14,095,452	5.7%	6,619.90	10.8%	4.62%	0.71%	5.81%	2.2%	3.4%	0.000250745	1.17275E-05
2000	259,753,054	290,594,274	13,484,516	757,077	12,727,439	4.5%	6,773.85	2.3%	6.02%	-0.10%	-2.29%	3.4%	1.1%	0.00052948	2.48307E-05
2001	290,594,274	322,448,433	26,492,391	898,720	25,593,671	8.0%	6,523.36	-3.7%	3.44%	2.00%	-9.72%	2.8%	5.1%	0.001591382	0.00201027
2002	322,448,433	346,096,030	(2,364,423)	1,069,770	(3,434,193)	-1.0%	5,195.61	-20.4%	1.67%	-4.47%	-23.79%	1.6%	-2.6%	0.005874094	0.001203241
2003	346,096,030	382,229,582	12,021,744	1,092,207	10,929,537	3.0%	5,558.99	7.0%	0.93%	1.29%	5.32%	2.3%	0.6%	0.001045452	0.000118893
2004	382,229,582	440,726,160	43,973,889	1,440,245	42,533,644	9.8%	6,403.15	15.2%	1.41%	8.90%	14.26%	2.7%	6.9%	0.00396806	0.004665313
2005	440,726,160	500,202,393	43,454,989	1,903,011	41,551,978	8.5%	7,476.66	16.8%	3.33%	7.05%	15.36%	3.4%	4.9%	0.000419898	0.001362706
2006	500,202,393	606,754,030	61,655,301	2,715,730	58,939,571	10.1%	8,242.12	10.2%	4.94%	6.78%	6.91%	3.2%	6.7%	0.000325468	0.003422288
2007	606,754,030	716,319,722	90,147,957	3,219,148	86,928,809	12.3%	9,554.50	15.9%	4.81%	7.39%	10.98%	2.8%	9.3%	0.000662755	0.006581029
2008	716,319,722	705,135,858	(16,082,004)	3,421,872	(19,503,876)	-2.8%	8,438.64	-11.7%	1.64%	-7.59%	-16.49%	3.8%	-6.3%	0.024373892	0.006312495
2009	705,135,858	563,808,849	(109,232,024)	2,418,989	(111,651,013)	-19.3%	6,424.28	-23.9%	0.18%	-20.94%	-25.51%	-0.4%	-19.0%	0.01595083	0.03194834
2010	563,808,849	652,202,115	86,478,251	2,558,749	83,919,502	12.9%	6,998.99	8.9%	0.14%	12.73%	8.77%	1.6%	11.1%	0.090627046	0.020779172
2011	652,202,115	762,134,527	111,039,225	3,167,414	107,871,811	14.2%	8,079.44	15.4%	0.09%	14.03%	15.30%	3.2%	10.6%	2.50435E-05	0.007581045
2012	762,134,527	800,516,517	17,678,775	2,863,323	14,815,452	1.9%	7,863.93	-2.7%	0.10%	1.79%	-2.76%	2.1%	-0.2%	0.011771974	0.000422872
2013	800,516,517	890,786,400	73,775,304	3,263,491	70,511,813	8.0%	9,558.83	21.6%	0.03%	7.90%	21.45%	1.5%	6.4%	0.004389571	0.004154931
2014	890,786,400	1,024,478,268	144,560,808	3,865,431	140,695,377	13.7%	10,726.43	12.2%	0.02%	13.66%	12.18%	1.6%	11.9%	0.003011726	0.011637437
2015	1,024,478,268	1,030,522,152	8,795,827	3,644,655	5,151,172	0.5%	10,882.28	1.5%	0.06%	0.48%	1.43%	0.1%	0.4%	0.013217111	0.000274965

Geometric Avg.						5.1%		6.3%				2.2%	2.8%		
Geometric Avg. Last 10 Years						4.6%		3.8%				1.9%	2.6%		

Variance or Avg Volatility	0.00486	0.00939333	0.005500312
Standard Deviation		0.096919195	0.074164089
Beta	33.19%	
10 year beta	62.39%	

Summary of indications

Selected Long-Term Return over Inflation	3%
Selected Year-to-Year Standard Deviation of Volatility	10%
Mean Reversion Factor	50% Chosen for consistency with value of 60% in 2014 report and desire for reasonable factor

Notes: All accounting statements used are as of 6/30 of the relevant year.

Technical Appendix

Background - Data:

The primary data presented to the OIR for analysis consisted of two types of components, although secondary data was provided as well. The first component was a set of claim status reports as of 12/31/15 and several prior years. These contained the paid and case incurred loss (payments to claimants and claimants' attorneys) and defense costs for each claim reported to NICA as of the valuation date. The most recent report contained a field with the date of final adjudication of each claim, and a related field indicating whether the Division of Administrative Hearings, "DOAH", awarded (deemed compensable) or dismissed each claim. It also contained fields such as the date of birth of the subject child and the date the claim was reported.

The second major data element provided by NICA was a set of individual claim worksheets.   These provide a projection of all the costs: dollar awards, medical expenses, nursing expenses (the primary costs), etc. for each future year. They provide for all expenses through an estimated future lifetime as estimated by NICA in conjunction with medical personnel. These are reviewed annually (in this case, during the following Spring) by NICA, and form the basis for the case reserves established as of 12/31 of each year. The future payments generally are not updated throughout the year. As an important note, these worksheets were reviewed by the consulting actuary used by the Office in its 2010 review of NICA, and, except for discounting and inflation, he found them to be acceptable. The Office concurs with his assessment, other than it might be desirable to have an understanding[10] of how any skew in claimant actual lifetimes (vs. the expected lifetimes) might impact the average costs. The Office previously used the 2011 versions of these worksheets in its 2012 study and the study of year end 2014.

Additional data was presented in the form of financial statements of NICA as of 6/30/2015 and prior years. The actual investment return in each of the prior years was determined from these. This was used in the construction of Exhibit 10.

Lastly, information for projecting 2016 costs and premium was provided. Premium was provided, as was information on the historical count of live births and on the obstetricians and midwives covered. Noting that some of the premium comes from physicians that do not deliver babies, the premium was deemed not desirable for estimating 2016 costs. So, the number of physicians and midwives electing coverage through NICA was used to project the costs arising from 2016 births which will be borne by NICA. The calculation is contained in Exhibit 2.

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[10] In the end, the Office was unable to identify any data that could be used to evaluate this.

Background - Claim Categories within Claim Lifetimes:

Claims of NICA may be thought of as having several stages of life. Initially, the child is born and suffers some potentially compensable condition for which the parents will eventually bring a claim. At that time, the claim has occurred, but it has not yet been reported to NICA, so the claim is considered "unreported". At some point the claim is presented to NICA, at which time the claim becomes a "pending" claim. During that time NICA forms an impression of the claim as whether it is valid or not, but they are not allowed to make a binding decision on the compensability of the claim.   So, pending claims may be also referred to as "unadjudicated".

 The first entity with power to assess compensability is the DOAH administrative law judge. Following this decision, and any final appeals[11], the claim is said to be "adjudicated". Should the DOAH judge determine the claim to be compensable (and, if the claim is appealed, the appellate court agrees) it then may be considered to be "compensable" or "awarded" in the parlance of this report. It is specifically considered "awarded and pipeline" once the claim has been awarded, but NICA has not yet prepared a worksheet evaluating the cost of the claim. As soon as the key information is then obtained (about two to six months later on the average) a worksheet is prepared and the claim may be thought of as "evaluated and open". When payments cease, the claim is "closed". Should the DOAH judge determine that the claim is not compensable (and, if the claim is appealed, the appellate court agrees), the claim is considered "dismissed". A claim may be "dismissed and pipeline" until the related defense costs are paid and it is "dismissed and closed".

Background - Inflation:

Medical cost inflation is generally perceived to be significantly higher than broad, general inflation in the United States. However, the vast majority of future costs anticipated by NICA are nursing costs. Further, NICA officials indicated that many of those expenses are limited or related to a Medicaid reimbursement rate which has been relatively flat for some time. Consequently, the Exhibit 10 analysis uses the overall Consumer Price Index as a proxy for cost inflation NICA experiences.

Background - Interest Rates:

As an improvement to the prior view, the long-term return on assets was used as the basis for the future interest rate to be earned by NICA. This was done in response to a view that that the prior view did not give proper credit for investment earnings to NICA.

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[11] In the 2012 report, a claim was said the adjudicated following just the DOAH decision. The revision was made in the last report so the new coding supplied by NICA could be used.

General Reserving Approach - Workbooks for Open and Evaluated Claims:

NICA officials generally prepare claim-by-claim worksheets for use in case reserving following the end of each year for all the claims they expect to be making payments on in the following year. The majority of the projections on most of the worksheets were actually prepared using information as of the Spring following 12/31/2015. Therefore, these were done at 2016 cost levels. These worksheets combine the costs of various types of payments to be made over the course of the claim. They include projections of both loss and defense. Key data values that were obtained from the worksheet were as follows:

1. Up to four future periods of base expenses (primarily nursing care-the largest cost item), beginning in 2016, with the amount of expenses payable annually in each period, that together comprise the entire future lifetime of the child per physician estimates. These contemplate how nursing expenses change throughout a child's life as insurance and similar arrangements change. For example, for an individual with an estimated life expectancy of 20 years, the reserve worksheet might show the estimated expense by major expense category for each of the next five years (after 2015), the five years following that, and then the remaining 10 years of a 20 year life expectancy at 2015. Although expenses are projected for each year of the life expectancy of the individual claimant, the expenses were deemed to be expressed at current (2016) cost levels.
2. One-time expenses (expected to be incurred once throughout a child's remaining lifetime), broken down between home remodeling (to facilitate care) and other expenses.
3. Total of periodic expenses, such as purchases of handicap ramp-equipped vans, etc. expected to be required over a child's future lifetime.

Item 1. was assigned to calendar years using the assignment specified by the future periods (beginning in 2016). The one-time expenses were pro-rated over the projected lifetime. The periodic expenses were also rotated over the child's projected remaining lifetime. These worksheets were used to construct the stream of payments underlying Exhibit 1.

For subsequent portions of this analysis, the full payout pattern from inception of payments was constructed for each claim. The stream of payments by calendar year through 2015 was constructed by pro-rating[12] the paid loss to-date at 12/31/2015 among the years starting with the year of final adjudication. These from-inception payout streams for each claim were adjusted to a common 2016 beginning payment level, and the amount and pattern of the payouts on a 2016 cost basis were determined for Exhibit 4.

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[12] This approximation of the payout pattern of the paid loss to-date is imperfect, but is unlikely to generate material error in the overall approximation of the expected reserve need and percentile ranges.

General Reserving Approach - Best Estimate Overall 2015 Plus Prior Pipeline and to be Awarded Claims:

The first step in estimating the costs of the claims that are the subject of this report involves computing the unpaid costs as of 12/31/2015 for all 2015 and prior year claims. Generally, the approach involves first estimating the ultimate number of claims in each accident year using a standard reported count development count technique. Then, ratios of claims awarded to claims adjudicated for various lags between birth and adjudication (noting that claims that take longer are somewhat more prone to be dismissed) were used to estimate the number of the unadjudicated (at 12/31/2015) claims that would eventually be awarded at the time of the final adjudication. Then the process for determining the 12/31/2015 reserve was as follows:

1. Estimate the post-2015 payout of evaluated and open claims using worksheet information, and adjust the payouts to the present value of inflated future costs. Sum all those payouts together to obtain the future aggregate payout stream for all evaluated and open claims. This payout stream will eventually form part of an aggregate reserve by taking a present value using the excess of the developed interest rate over full Consumer Price Index ("CPI") inflation.
2. Determine the number of pipeline and to be awarded claims (73) by subtracting the number of claims with worksheets (177) and the number of closed awarded claims (166) from the total expected ultimate number of awarded claims for 2015 and prior (416). This result (73) represents all claims that are expected to ultimately be awarded and are not presently (as of 12/31/2015) in worksheet status.
3. Determine the percentage of claims that are expected to be serious (66%) using ratios from a previous (reviewed) study by NICA's actuary.
4. Determine the average payout levels of all evaluated and open claims[13] . Those are projected for future payouts that begin in many different years, but at this point are adjusted[14] to the 2016 cost level. The investment discount/inflation off-balance will be introduced at a later stage. Sum all the payments from inception of payout streams and divide by the number of claims to get the average payout stream at 2016 levels of a single future awarded claim. Payments on these future evaluated and future awarded claims were assumed to begin on the average in 2017, therefore, the average payout stream is multiplied by the number of pipeline and future awarded claims, and combined with the results of Item 1.
5. Analyze (Exhibit 5) the incremental 9/30/2014-12/31/2015 paid and incurred defense costs for awarded claims divided by the number of claims awarded within the same period. A cost of $12,000 in 2016 dollars was also selected, based on the cost for awarded claims, and $10,000 for dismissed claims.

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[13] The exclusion of awarded claims closed early due to death of the child may introduce some mild upward bias in our predictions, but it is not believed to be significant.

[14] The payments in 2014 and prior were such a sufficiently smaller portion of the total cost that they were taken to be approximately equal to their 2013 values without adjustment.

6. The aggregate payout stream from Item 3 (with the enhancements to include defense costs) was discounted to 12/31/2015 using the off-balance of interest over inflation. Of note, in Exhibit 10, the future inflation was estimated at 2.0% and future investment income at an average of 5.0%. Hence, the anticipated investment rate net of inflation was approximately 3%. Discounting the various payment streams produced the final best estimate of the direct unpaid loss and defense liabilities as of 12/31/2015.

General Reserving Approach - Defense Costs for Claims to be Dismissed in the Future:

The Office analyzed (Exhibit 5) the incremental 9/30/2014-12/31/2015 paid and incurred defense costs for dismissed claims divided by the number of claims adjudicated as dismissed within the 9/30/2014-12/31/2015 period. Similarly, the Office calculated the inception-to-date average defense costs on dismissed claims. The data indicated a value of $10,000 (see Exhibit 5) in 2016 dollars for dismissed claims. This value, when multiplied by the number of expected future dismissed claims (approximately 200), produces a non-material cost of approximately $2 million, so it was not reflected in the indicated reserves.

General Reserving Approach - 2016 Loss and Defense Costs:

2016 loss and defense costs were computed using a frequency/severity approach. In Exhibit 2, the total number of projected awarded claims for 2010-2014 was divided by the total count of obstetrician-years and midwife-years in the 2010-2014 period (sum of the obstetricians +midwives insured in each of 2010, 2011, …, 2014). The result was the anticipated awarded claim frequency. Similarly, the anticipated dismissed claim frequency was estimated in Exhibit 3. Separately, the expected number of obstetricians and midwives insured in 2016 was provided by NICA. The projected awarded claims for 2016 births and dismissed claims for 2016 births were estimated by multiplying the projected frequencies by the number of obstetricians and midwives insured in 2016. The average awarded claim loss severity was estimated by applying the average 2016 cost level severity computed by adjusting the average payout of awarded claims to the inflation associated with a payments starting year of 2018. Similarly, a defense cost per claim of $12,000 in 2016 dollars was used for all claims. The loss was assumed to begin paying, on average, in 2018, and the defense was assumed to, on the average, be paid in 2018. The final values were then discounted to 12/31/2015 using the selected average net discount rate.

Since the statutes governing NICA specify that the assessments are to be paid (essentially) at the beginning of the year, the costs in the payment stream so computed were discounted to 12/31/2015. The sum of this present value and the present value of the unpaid liabilities forms the Office's best estimate of the aggregate operational liabilities as of 12/31/2015.

Estimation of Reinsurance Recoverables:

Due to the small size of this contra-liability, we simply accepted the estimate provided by NICA's actuary.

Estimation of Percentile Ranges:

The last step in our analysis was the estimation of the percentile ranges. In this process, the Office first estimated the variance in the payouts at 12/31/15 cost and interest levels. The result was used to estimate the variance in future costs given that the exact inflation and interest assumptions used by the Office in computing present values holds until each claim is closed. Then, the total variance was estimated by adding that derived variance of values at the 2016 cost level to the variance in present values due to volatility in the inflation/discount relationship from year to year. As part of the first goal of estimating the 12/31/15 cost level values, it must be recognized that the variance in the 2015 and prior birth years will create parameter variance in the estimate of the 2016 costs. The variances accounted for are as follows.

1. Variance between the actual future lifetimes of claimants and the expected future lifetimes. This is assumed (no reliable reference could be found) to be represented as a standard deviation of 10 years on a 25-year expected future lifetime, or a coefficient of variation of 0.4 on a single claim reserve. The calculations are slightly more complex on a set of claims with different payout amounts, but the Office used the simplified coefficient of variation of $0.4/\sqrt{n}$ for the coefficient of variation of the total 12/31/15 level reserve on "n" claims.
2. For the number of future awarded claims (the cost of dismissed claims is minimal), a Poisson distribution was assumed, hence the process variance of the aggregate of a random number of counts and a random value for each one is equal to (under the compound Poisson version[15] of the collective risk model) the expected number of claims times the expected value of the severity squared ($E[X^2]$). That expected value (at 12/31/15 levels) may be computed by simply computing X^2 of the individual claims' costs at 12/31/15 levels using all worksheet (award and evaluated) claims.
3. The results of Item 2. must be compounded by the parameter variance associated with the uncertainties of claimants' lifetimes. That is computed using the ratio of post-2015 projected claims payments to the all year total claims payments. Multiplying that ratio by the 0.4 coefficient of variation of future lifetimes and dividing by the square root of the number of claims in worksheet status yields the coefficient of parameter variation.
4. The parameter variance in the 2016 count distribution is approximately equal to the number of projected awarded claims for 2010-2014 divided by five.

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[15] The Compound Poisson distribution is, to some actuaries, the most basic distribution for modeling aggregate loss costs. It assumes that the number of expected claims is known (the Office added some uncertainty at a later step, but this served as a starting point), and whether each claim happens is no related to whether or not any other claims happen. It assumes that the costs of each claim are not related to those of any claim, other than all the claims are subject to the same set of potential costs.

5. The process variance of the 2015 aggregate costs at 12/31/15 calendar year cost levels is equal to the result of the collective risk formula using count parameter variance (Item 4.). That is to say, it is equal to the expected count times the expected squared individual cost per the formula from Item 2., plus the count parameter variance from Item 4. times the square of the average severity (at 12/31/15 levels) used in projecting the cost (2016 basis) of future claims.

6. The parameter coefficient of variation from Item 3. also applies to the 2016 year.

7. The aggregate future payout streams for all claims combined for 2015, 2014, and prior years are combined into a single set of future payments. Using Brownian Motion[16] with "mean reversion" (in this case, 30% of the difference between the prior rate and the baseline 2% off-balance of interest and inflation) derived[17] from the off-balance of investment and inflation costs in Exhibit 10, 200 different simulations[18] of the future evolution of that discount factor over the future periods were run, and the ratios of the resulting present value for each scenario were computed. The standard deviation of those values, divided by the mean value, represents the process variance coefficient of variation for net discount.

8. The aggregate variance was estimated as:
    a. The square of (Item 1. times the present value of the open and evaluated claims).
    b. Plus Item 2. times the square of the discount factor for future claims projected to begin in 2015.
    c. Plus the square of (Item 3. times the discount factor for future claims projected to begin in 2015, times the cost at 12/31/15 levels of the average future claim).
    d. Plus Item 5.
    e. Plus the square of (Item 3. times the discount factor for future claims projected to begin in 2016, times the cost at 12/31/15 levels of the average future claim).
    f. Plus the square of (Item 7. times the best estimate of the net discounted liabilities from 2015 and prior as computed elsewhere in the report).
    g. Equals the variance of possible direct aggregate results.

The percentile ranges were then computed using a lognormal distribution fit to the mean (best estimate) and variance (Item 8.) computed by the above process.

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[16] Brownian Motion is the most common "stochastic process" for modeling the range that a given numerical item or set of items will take as they change over time. The mean reversion aspect corrects the Brownian so that items tend to revert to their starting value over time.

[17] Of note, the data suggested a 10% drift standard deviation and a higher mean reversion, but the consequent interest rate paths were, by prior observation, far too volatile. Therefore, a drift standard deviation of 10% and a mean reversion factor of 30% were used.

[18] Since these were relatively long stepwise paths, the NtRand plug-in from Numerical Technologies was used in lieu of the standard random number generator. A standard cumulative normal distribution inversion method was used to obtain the stochastic portion of the paths.

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