WISCONSIN STATE LEGISLATURE COMMITTEE HEARING RECORDS

2005-06
(session year)

Assembly
(Assembly, Senate or Joint)

Committee on Insurance (AC-In)

(Form Updated: 11/20/2008)

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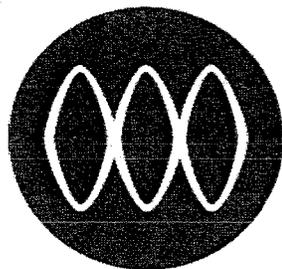
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A MILLIMAN GLOBAL FIRM

Milliman USA

Consultants and Actuaries

CITIZENS ALLIED
FOR PENNSYLVANIA PATIENTS

Projected Effect of
Capping Non-Economic Damages
On Pennsylvania Physician
Professional Liability Costs

Prepared by:

Richard S. Biondi, FCAS, MAAA
Arthur Gurevitch, PhD

July 17, 2003

Milliman USA

Consultants and Actuaries

July 17, 2003

Mr. Kenneth Jones, Esq.
Secretary
Citizens Allied for Pennsylvania Patients
777 East Park Drive
P.O. Box 8820
Harrisburg, PA 17105-8820

Re: Pennsylvania Cap on Non-Economic Damages

Dear Mr. Jones:

Enclosed is our analysis of the effect of caps on non-economic damages on medical malpractice losses and loss adjustment expenses for physicians in Pennsylvania. In this document, we describe our data, methods, and conclusions.

We appreciate this opportunity to provide consulting actuarial services to Citizens Allied for Pennsylvania Patients.

Very truly yours,

Arthur Gurevitch, PhD

Richard S. Biondi, FCAS, MAAA

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CITIZENS ALLIED
FOR PENNSYLVANIA PATIENTS

PROJECTED EFFECT OF
CAPPING NON-ECONOMIC DAMAGES ON
PENNSYLVANIA PHYSICIAN
PROFESSIONAL LIABILITY COSTS

Prepared by:

Richard S. Biondi, FCAS, MAAA
Arthur Gurevitch, PhD

July 17, 2003

INTRODUCTION

Milliman USA, Inc. (Milliman) was engaged by Citizens Allied for Pennsylvania Patients to analyze the potential effect of tort reform on physician professional liability costs in Pennsylvania. The goal of this project was to estimate the expected effect on medical malpractice losses and loss adjustment expenses (LAE)[1] of the imposition of a cap on the maximum allowable verdict amount for non-economic damages[2] (primarily, "pain and suffering").

Caps on non-economic damages are widely viewed as the most effective reform measures to help control escalating medical malpractice costs; the effectiveness of California's Medical Injury Compensation Reform Act of 1975 ("MICRA") is most often cited. In that state, medical malpractice losses (reported to the National Practitioners Databank) per physician are about half (52%) of the countrywide average. But, other large states that have instituted caps similarly have lower medical malpractice losses per physician. These include Colorado (69% of the countrywide average), Indiana (86%) and Maryland (64%). Conversely, large states without caps have higher than average medical malpractice losses per physician. They include: Florida (136% of countrywide average), Illinois (144%), New Jersey (131%), New York (156%), and Washington, D.C. (144%). Pennsylvania, a state without caps on non-economic loss, ranks third in the nation (behind only Nevada and West Virginia) with losses per physician 171% of the countrywide average.

Milliman USA developed an actuarial model to estimate the effect of a $250,000 cap on non-economic losses for Pennsylvania physicians in 2004, using publicly available data compiled by the National Practitioner Data Bank supplemented with publicly available

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[1] Loss adjustment expenses pertain to the expenses associated with the defense of medical malpractice claims. These include defense attorneys' fees, expert witness fees, and other defense-related expenses.

[2] Verdict amounts are generally itemized between economic damages and non-economic damages. Economic damages include reimbursement for medical expenses, lost wages and other out-of-pocket expenses. Additional verdict amounts are non-economic damages. These amounts mainly are intended to compensate claimants for pain and suffering endured from medical malpractice occurrences.

data from Florida and Texas Departments of Insurance[3], plus results from a 1997 Milliman study on non-economic caps in New York.

CONCLUSIONS

The results from our model are shown in Table 1. We conclude that a $250,000 cap on non-economic damages would reduce loss (indemnity) by about 22%, which corresponds to an 18% reduction in the combined losses and LAE (defense costs) for physician policies written in 2004.

Pennsylvania statutes mandate the coverage levels physicians are required to carry as a condition of licensure. Pennsylvania physicians are required to obtain primary coverage with prescribed limits and then may acquire excess coverage through the Medical Care Availability and Reduction of Error Fund (Mcare).[4] Historically, the required primary + Mcare/CAT fund excess provided a combined total coverage of $1.2 million per claim. For 2004, Pennsylvania physicians will be required to carry $1 million combined per claim limits; Mcare will provide excess coverage of $500,000 per claim, over a physician's primary coverage of $500,000 (plus all LAE)[5].

The relative savings resulting from a cap on non-economic damages is significantly different for primary coverage and Mcare. We project a reduction of 11% for the primary layer (first $500,000 plus LAE) as a result of a $250,000 cap, while MCare losses are projected to decrease about 42%. Savings for the primary layer are constrained both by

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[3] Ideally, we would have preferred to use a database dedicated to Pennsylvania medical malpractice cases. Unfortunately, there is no single, comprehensive, publicly available source of such information.

[4] Until March 2002 Mcare was known as the Medical Professional Liability Catastrophe Loss Fund ("CAT" fund). In this report, we use the term "CAT" fund to refer to historical excess payments, and "Mcare" to refer to future excess payments. The CAT fund/Mcare had various coverage/limit structures that changed over time (Exhibit 1).

[5] Exhibit 1 shows the changing limits of the CAT Fund/Mcare. This analysis is based on the limit structure scheduled for 2004; a $500,000 primary per occurrence limit and a $500,000 Mcare excess limit. Aggregate limits were assumed to be inconsequential.

the $500,000 limit and the fact that the primary covers both indemnity and LAE (non-economic caps affect LAE only indirectly and to a much lower extent than indemnity).

Table 1: Projected effects of a $250,000 cap on non-economic damages on 2004 medical malpractice costs in Pennsylvania.

		Loss & LAE	Loss Only
Primary	$500,000/occurrence + LAE	11%	12%
Mcare	$500,000 / occurrence excess $500,000	42%	42%
Total Covered Loss	Primary + Mcare	18%	22%

Our objective was to compute the reduction to the medical malpractice losses and loss adjustment expenses that would result from capping non-economic damages. Thus, when we conclude that there is an 18% reduction associated with a $250,000 cap on non-economic damages, we mean that we expect losses and LAE to be 18% lower, at the same point in time, than they would have been in the absence of the cap. Adequate rates should also be about 18% lower, given the assumption that other insurer expenses[6] are reduced in proportion to the reduction to the losses and LAE. However, if rates are inadequate prior to the application of the cap, the cap should reduce the margin of inadequacy by 18%, but will not necessarily support a rate reduction.

OVERVIEW OF ANALYSIS

We based our analysis on data from the National Practitioner Data Bank Public Use Data File as of 12/30/02 ("NPDB"), and publicly available physician malpractice data from the Texas and Florida Departments of Insurance.

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[6] Other insurer expenses include taxes, licenses, fees, commissions, and salaries of underwriting personnel. For many medical malpractice insurers, these expenses tend to be small compared to losses and LAE and also tend to vary with losses and LAE. Thus if losses and LAE decrease by 18%, it is reasonable to expect that adequate premium levels will also decrease by about 18%.

MILLIMAN USA

We used the NPDB to determine the average cost per claim for Pennsylvania physicians. Some states, such as Pennsylvania, have state funds that make malpractice payments in addition to the payment made by a physician's primary carrier. In these cases, there is the possibility of two submissions to the NPDB (i.e., one from the primary carrier and a second from the state fund). This tends to increase the apparent frequency of claims while reducing the average cost per claim. We were able to identify payments made by the CAT fund and combine them with the payment made by the primary carrier to get the appropriate payment for each claim. These values were trended to 2004 and the average trended value was further "corrected" to eliminate the effect of historical limits (e.g., $500,000 primary + $700,000 CAT fund = $1.2 million) so that we could estimate the average, unlimited loss cost per physician claim.

The NPDB does not contain information on:

- LAE (neither defense costs on paid claims or claims without indemnity payments).
- Number of physicians jointly sharing in the cost of a case.
- Proportion of loss for non-economic damages.

These parameters were derived from Texas and Florida malpractice databases. Aggregate LAE and indemnity data are available from insurance company annual statements[7] but we are not aware of other publicly available claim by claim data sources for LAE, physician number, or non-economic percentage for Pennsylvania physicians.

We then incorporated the various calculated parameters into a "Monte Carlo" simulation model. The simulation generated hypothetical cases, each with values (e.g., number of defendants, indemnity and LAE for each defendant, percent non-economic damages, etc.) randomly selected within the bounds of the measured parameters. The value of each hypothetical case was determined under pre-reform and post reform conditions and these values were applied to the Pennsylvania insurance structure (primary + Mcare). We measured and report on the average differences of 30,000 iterations.

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[7] For the years 1997-2002, the annual statement ratios of LAE/Indemnity for PA, TX, and FL are 35%, 33%, and 29% respectively. Our model simulated an LAE/Indemnity ratio of 36%.

OBSERVATIONS

Several points about the results warrant specific mention. First, it is clear that tort reform of the type envisioned in this report would have a very significant effect on expected losses. Reductions in indemnity are expected to be about 22% -- a 12% reduction in primary payments and 42% reduction for Mcare excess payments[8].

The overall malpractice savings after incorporation of defense costs becomes somewhat lower. Our analysis assumes that defense costs (loss adjustment expenses or "LAE") follow the effects on indemnity, though not to the same extent. Additionally, we estimated and incorporated the magnitude of LAE on claims that close without indemnity payments; a cap on non-economic losses should have no affect on these costs.

The indemnity savings percentage is so high because, according to our data, the average claim comprises nearly two-thirds non-economic loss. Further, the average value for a malpractice settlement anticipated for occurrence year 2004, reflecting all defendants, is expected to be nearly $1 million (total unlimited loss for all defendants combined). Because verdicts tend to be larger than settlements, and the cap on non-economic damages will be applied to verdicts, the effect is magnified.

An important assumption in our analysis is that the caps will apply to the total non-economic damages for each medical malpractice occurrence, regardless of the number of physician and/or hospital defendants. Thus if, e.g., $1 million of non-economic damages is awarded to a claimant from an occurrence involving three physician defendants, it is assumed that the entire $1 million would be capped, not the amounts apportioned to each of the three physician defendants. Thus, by dividing the cap among all of the defendants

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[8] The model forecasts a reduction in total (unlimited) indemnity of 46%. However, we have refrained from making definitive statements about saving in *excess* of the Mcare layer, as it is the choice of individual physicians to purchase or not purchase additional excess coverage. We are not aware of any data sources that quantify the number of physicians purchasing coverage in excess of Mcare.

in a given case, the effective cap for any single defendant will often be lower than $250,000.

The results of this analysis are intended to apply to physicians' malpractice. Although hospitals can also expect to see a change in their loss costs as a result of tort reform, many considerations make it difficult to precisely quantify the savings for hospitals by extension of the data in this report. For example, hospitals have significantly different average severity than physicians and there is little publicly available information on hospital malpractice costs in Pennsylvania. However, we can infer that the effect on hospitals is undoubtedly greater than the effect on physicians to the extent that hospitals have higher insured limits and thus "deeper pockets" than do physicians.

A cap on non-economic loss can have certain additional effects that we did not consider in the analysis. It is possible, for example, that jury awards and settlements for economic loss will increase to partially offset the cap on non-economic loss, or that the percentage of defense verdicts will decline. Legal arguments might be devised to narrow the types of damages subject to the cap, or to define new forms of damages that are outside the limitations on non-economic loss. It is possible that certain types of lawsuits or damages may be exempted (either by statute or court decision) from the award cap. As a final example, greater care might be taken by plaintiffs to carefully define and fully list all elements of economic loss, if the possibility no longer exists to use non-economic losses as a catch-all for ill-defined damages. All of these items could act to decrease the savings realized by this type of tort reform. In our model we assumed that no such events would occur.

We also assumed that tort reform would have no effect on the frequency with which claims or suits are filed. In actuality, certain suits currently in the system (particularly those with very low or zero economic loss) might not be brought to court if the potential reward to the plaintiff -- and the plaintiff's attorney -- is too low. If this happens, it would increase the savings realized by the tort reform.

Another important assumption in our analysis is that a cap on non-economic damages will have the same proportional effect on settlements as it does on verdicts. This is because a settlement is negotiated based upon the estimated cost of the claim if it were to go to a verdict. Thus, if the cost of verdicts is reduced due to a cap, it follows that the cost of settlements would be reduced proportionately.

METHODOLOGY

Overview

For this analysis, we created a "Monte Carlo" simulation model to estimate the effect on the average settlement and defense costs that would be realized by a cap on non-economic damages. This method randomly generates hypothetical lawsuits to measure uncapped and capped values.

The model is outlined in Exhibit 2 and works as follows:

Multiple Defendant Cases

Exhibit 2 shows an example of an occurrence that generates two claims, with one against the physician "A" and the other against the physician "B". The number of physician claims per case, ranging from 1 thru 5 is randomly determined following the pattern shown by Florida and Texas physician malpractice claims (Exhibit 3 – see discussion below).

Average Cost per Claim

In Stage A of the example, a case is "created" by randomly assigning the two physicians to the case. Each physician/claim is then assigned a random loss, which conforms to the projected Pennsylvania loss distribution, determined from the NPDB (see discussion below). In the example in Exhibit 2, Physician "A" has a settlement value of $1.43 million and the Physician "B" claim has a value of $106,872.

In Stage B, the amounts from each claim are combined into a single case. In the example, the total case value is about $1.54 million.

Settlements v. Verdicts

In Stage C, an implied verdict amount is calculated.

Of all malpractice claims reported in the NPDB, only a small percentage is the result of verdicts; practically all claim payments arise from settlements. Yet, caps on non-economic damages directly affect only payments awarded by verdict. In this analysis, we infer the nature of the relationship between verdicts and settlements in order to draw conclusions about the likely effect of tort reform on all claims. That is, though tort reform would directly affect only verdicts, we assume that it would indirectly affect settlements in a proportional fashion. The underlying assumption is that any lawsuit could be tried to verdict but that a settlement is reached based on an anticipated sustainable verdict amount for a case.

Up until now, the dollar amounts assigned to the claims are settlement amounts based upon NPDB data, which mostly include settlements. However, for any given type of occurrence, the cost of a verdict tends to be higher than the cost of a settlement because there is less risk to a claimant in accepting a settlement relative to pursuing the claim to a verdict. In Stage C, we adjust the value of the claim to the verdict amount, which is the amount that would actually be limited by the cap on non-economic damages.

We could not determine an inferred verdict value from the NPDB, Florida or Texas DOI databases. Therefore, we used the results of a study[9] performed by the Rand Institute for Civil Justice to estimate the relationship between verdicts and settlements. Although the analysis is not recent, we believe that the type of relationship we are seeking will not change quickly over time. On the basis of this study, and other work that we have performed, we selected a factor of 1.297.

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[9] Danzon, P.M. and Lillard, L.A., 1982. The Resolution of Medical Malpractice Claims – Modeling the Bargaining Process. Rand Institute for Civil Justice.

Economic and Non-Economic Damages

In Stage D, the case is apportioned into economic and non-economic components based on Texas DOI data (Exhibits 4,5). Note that we compared Texas and Florida non-economic distributions. We selected the Texas apportionment to use in the Pennsylvania simulation because of the lower average non-economic percentage. This results in a more "conservative" estimation of savings (e.g. using the Florida non-economic distribution, we would conclude a tort reform savings *at least* as large as our current conclusions).

In the example in Exhibit 2, the simulation assigned a 25% economic share ($500,041) and a 75% non-economic share. The non-economic amount ($ 1,500,124) is capped at $250,000. The capped branch of the diagram is used to compute the cost of the occurrence with a cap, while the uncapped branch is used to compute the current cost of the occurrence without a cap.

Post Verdict Appeal Reduction

In Stage E, post verdict adjustment (appeal factors) is applied to the case components. Most cases that go to verdict undergo further appeal and negotiation following the verdict. Cases usually settle for less than the verdict amount, even after a verdict has been returned. We therefore further adjusted the verdicts for the effects of the appeals process using values shown in Exhibit 6. These values could not be determined from the NPDB, Florida or Texas DOI databases and are based on industry values. The economic portion of a case is subjected to the same reduction under both pre and post reform scenarios. But, we assumed that the capped non-economic amount is not reduced further. Finally, the totals for the uncapped and capped verdict amounts are calculated and a savings determined. In the example, the total uncapped value is $620,051 and the total capped value is $405,013, a savings for this case of 34.7%.

Final Calculations

The total (economic + non-economic) pre-reform amount is compared to the total post reform amount and a percentage savings is calculated. The savings is then applied to the initial settlement values for each individual claim. Thus it is possible for even relatively small claims to realize the benefits of the cap, provided that they are components claims of a larger case where the cap is exceeded. In the example (Exhibit 2), a $1.5 million claim had a 35% savings due to a non-economic cap. The physician with a claim worth $100,000 (well below the cap), would nevertheless, experience a savings of 35% and a claim value reduce to about $70,000.

These steps were repeated thirty thousand times to measure the average affect the caps for the entire population of claims, where the characteristics of all of the claims closely model the measured claim values.

DATA SOURCES

National Practitioner Data Bank Public Use Data File: Cost per Claim

Overview

The National Practitioner Data Bank (NPDB) Public Use Data File contains selected variables from medical malpractice payment reports on physicians, dentists, and other licensed health care professionals. It also includes reports of adverse licensure, clinical privileges, professional society membership, and Drug Enforcement Administration (DEA) reports (adverse actions), and Medicare and Medicaid exclusion actions taken by the Department of HHS Office of Inspector General. The NPDB is maintained by the U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Division of Quality Assurance.

The NPDB has been collecting information on cases closed since September 1, 1990. Claims data are collected from all states, so this database provides a rich source of

information for geographical and temporal analyses. We obtained the Public Use Data File with data through 12/31/02.

The NPDB Public Use Data File contains information on claims against individual practitioners only. There is no information collected on medical malpractice actions against hospitals or other entities. Further, reports are submitted to the NPDB only when an indemnity payment is made. Therefore, there is no information on either pending claims or claims closed without an indemnity payment. We limited our NPDB analysis to medical malpractice claims (by eliminating adverse event reports) against physicians (by eliminating claims against dentists, chiropractors, nurses, etc).

Duplicate NPDB Filings

NPDB regulations mandate reporting by each entity making a malpractice payment. In Pennsylvania, physicians frequently have multiple "entities" (primary carrier and Mcare, and possibly a third, excess carrier) making payments, and NPDB reports, on a single claim. A naïve analysis of Pennsylvania malpractice data would lead to a number of inaccurate conclusions:

- Frequency, the number of claims per physician, would be inflated.
- The number of multiple claim physicians would be inflated.
- Severity, the average cost per claim, would be deflated.
- Severity trend, the annual increase in claim size, would be reduced.

We corrected for the Pennsylvania insurance structure and reporting pattern by grouping filings into claims. Our method for grouping claims relied on facts within each NPDB record including: Practitioner ID, Practitioner Number of Malpractice Payments, Payment Amount (based on limits), State Fund, Year Closed, Malpractice (occurrence) Year, Payment Type (settlement/judgment), Type of Reporting Entity, and Malpractice Act/Omission Code. This method involved judgment and was not absolute. For example:

- A significant number of claims at each primary limit (e.g., $200,000) did not have a corresponding Mcare payment. This led to an apparently "excessive"

number of claims at the primary limits. This is due, presumably, to the primary limit being a settlement "focal point" (an agreement to settle for policy limits and not bring Mcare into the case), a delay in the reporting of the Mcare component (see below), our inability to combine primary and Mcare components of the same case, or the rare possibility of a Pennsylvania physician that does not carry Mcare excess coverage.

- Nearly 15% of "State Fund" payments (presumably Mcare) did not have a corresponding primary payment (or indication that a primary aggregate had been reached). We treated these as primary payments.

- About 144 physicians had single case payments in excess of the $1.2 million combined primary + Mcare limit. We assumed these physicians carried excess policies or were covered under hospital/corporate policies.

- The "closing" year for primary and Mcare filings were often different. The NPDB does not report the actual settlement or judgment date but rather reports the year the filing was processed by the NPDB (which must be within 30 days of the claim payment). The Mcare filing frequently has a closing date in the year subsequent to the primary filing, suggesting that Mcare tends to report (or pay) after the primary carrier. When combining filings into cases we selected the last closing year for analysis (e.g., if the primary $200,00 has a closing year of 2000, and the Mcare $300,000 has a closing year of 2001 we combined them into a single cases, with a value of $500,000, closed in 2001). This process tends to shift payments to later closing years.

The consequences of grouping NPDB filings into claims shown in Exhibits 7. Note that grouping filings into claims:

- Reduces frequency by 20%, from 4.96 claims per 100 physicians per year to 3.95 claims per 100 physicians per year (this is still one of the highest rates in the nation)

- Reduces the number of physicians with more than one claim from 3,684 to 2,402 (35% decrease).

- Increases the average case size by 26%.

Unlimited Average Cost per Claim

Average cost per claim (Exhibits 8, 9) was determined from Pennsylvania NPDB grouped claims. The average cost per claim from the NPDB was used as the basis of our loss distribution used to generate simulated claims in our model.

Even after combining NPDB filings into claims, the NPDB claims remains "censored" by the physician's combined (primary + Mcare) per claim policy limit (i.e., a case with a value of $2 million would be reported at a total of $1.2 million if the physician had a typical policy limits). Unlimited claim sizes are distributed according to a log-normal[10] loss distribution. To fit a log-normal distribution to censored losses we estimated a policy limit distribution and applied this to unlimited data. The policy limit distribution incorporated unlimited losses, a $1.2 million limit, and a small proportion of policies limited to $200,000 and $300,000 (Exhibit 8,9). We determined the parameters of the uncensored distribution so that when the unlimited claims are censored by the limits, the results most closely matched the actual, limited losses from the NPDB.

We fit log-normal claim size and policy limit distributions to Pennsylvania NPDB grouped claims closed in 2000 and 2001[11]. The parameters for the unlimited loss distribution were then trended by 7.4 years at 4% to bring the values to occurrence year 2004 levels. Based on these years, we estimated the average unlimited loss trended to 2004 is $870,000 (log normally distributed with a coefficient of variation of 3.0); this corresponds to a average loss of $453,305 for claims limited to $1.2 million and $287,072 for a $500,000 primary (Exhibit 8,9).

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[10] A "log-normal" loss distribution is described in a variety of statistics textbooks as a statistical distribution where the logarithms of the loss amounts are distributed in accordance with a Normal Distribution with mean (mu) and standard deviation (sigma).

[11] We used 2000 and 2001 claims as the claim distribution for cases closed in 2002 differed from other years because of Mcare's reporting pattern. Mcare tends to report claims later then the primary carriers (see discussion above), so the most recent year of data is incomplete for primary cases that will eventually be combined with the Mcare excess.

Florida and Texas Departments of Insurance, Closed Claim Databases:
Non-Economic Apportionment, Defendants per Case, LAE

The NPDB provides no data for a number of other required parameters. In particular, we needed to estimate:

- The relative proportion of economic vs. non-economic damages for each case.
- The distribution of multiple defendant cases.
- Loss (indemnity) vs. expense costs.

Both Florida and Texas make malpractice data that address these issues available. Like the NPDB these databases contain closed claim information on paid malpractice claims. We calculated relevant statistics for each state, and then judgmentally selected factors for use in Pennsylvania.

Economic v. Non-Economic Losses
Based on the Florida DOI medical malpractice data, over 75% of the paid loss is non-economic loss (Exhibit 4,5). In Texas, non-economic damages account for about 60% of the total paid loss while an additional 10% are in punitive and interest charges so that Florida and Texas both show that only 20%-35% of loss payments are for economic losses.

We used the Texas distribution of economic/non-economic losses. This more conservative assumption would tend to reduce our estimates of the effect of a non-economic cap. Additionally, we dropped punitive and interest charges from our model, and determined an overall average 66% non-economic allocation. The selected distribution of non-economic damages factors is shown in Exhibit 5.

Corroboration With 1997 New York Study

In 1997, Milliman performed an analysis of the impact of proposed caps on non-economic damages for physicians in New York. In this study, non-economic damages were determined for all verdict awards on cases resolved between 1989 and 1993. In the New York study, non-economic damages were found to account for 70% of total damages, further corroborating our selection for Pennsylvania.

Multiple Defendant Cases

Malpractice lawsuits frequently involve several defendants (for example, a surgeon, and an anesthesiologist). The cap on non-economic damages applies to the entire case and not each individual claim. We, therefore, needed to determine the number of defendant claims within each simulated case.

The Texas DOI database contains a field for the number of insured physicians per cases (IPPC). In the Texas database, each paying insured physician is reported as a separate entry. Presumably, if two physician claims are involved in a case, the case will be reported twice, with the IPPC for each being two. Thus to correctly determine the actual distribution of physicians per case, it is necessary to divide the number of cases with IPPC of 2 by 2, the number with IPPC of 3 by three etc. Exhibit 3a shows our estimate of the distribution of physicians per case in Texas.

The Florida DOI database reports information at the claim level. We grouped claims into cases by matching demographic data (e.g., age, sex), calendar data (e.g., date of loss, date of suit), and court data (e.g., docket number, county/venue) to create cases from the claims database. Note that as the number of claims within a case increases, so does the saving from a cap on non-economic damages. Our analysis likely *underestimates* the number of claims per case[12] and therefore understates the savings due to caps. Exhibit 3b shows our estimates of the factors for grouping cases, based on the Florida DOI data.

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[12] This is because it is not always possible to determine that claims are related to the same case and there were likely some claims that we treated as individual cases that actually were related to the same case.

Despite different methods, these two databases show a remarkably similar distribution of doctors per case. Exhibit 3c shows the distribution of doctors per case we assumed for Pennsylvania.

Loss Adjustment Expenses

Loss adjustment expenses (LAE or "defense costs") comprise a significant proportion of the overall cost of a case. We determined average LAE for hospitals and physicians based on the Texas databases and trended these values to occurrence year 2004[13].

We found that LAE is not a fixed percentage of the settlement value but increases at a slower rate than loss payments. That is, it is relatively more expensive to defend a $50,000 case than a $5 million case. We quantified this relationship based on data in the Texas DOI database and applied the relationship to each case before and after application of the cap. Since there is a relationship between defense costs and settlement, a non-economic damages cap will cause some reduction in defense costs. However, because of the nature of the relationship, the savings in defense costs will necessarily be less than the savings in the settlement value (Exhibit 10).

Additionally, a large number of cases are closed without an indemnity payment as the result of dismissal, discontinuance, or defense verdicts. These cases nevertheless accrue significant defense costs that make up large share of a professional liability premium. A cap on non-economic damages should *not* affect these payment amounts. The Texas DOI database does not contain reliable information on cases that close without indemnity payments. We estimated these using an industry standard ratio of $1.15 for each dollar of defense costs on cases with payments (prior to the application of the cap).

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[13] Empirically determined trend rate for loss: 6%, Trend rate for LAE 7.5%. Texas closed claims data trended from loss date to 6/30/2004.

LIMITATIONS

Although we based our results on generally accepted actuarial and statistical procedures and our professional judgment, our results also reflect numerous assumptions. Due to the uncertainty associated with these assumptions and with the prediction of future events, actual results will vary from our projections.

Reasons for this uncertainty include random statistical fluctuations, as well as unanticipated changes in claim procedures and settlement practices, legislative and judicial decisions, attitudes of claimants and the courts, social and economic inflation, and numerous other social, political, and economic factors. These forces are particularly important in an analysis of this type, i.e., a study of the potential effect of tort reform. Data limitations also contribute significantly to the uncertainty surrounding these results.

In performing this analysis we relied upon publicly available data from the National Practitioners Data Bank, the Texas and Florida Departments of Insurance, and industry sources of medical professional liability data. We did not audit any of this data or other information. If the underlying data or information is inaccurate or incomplete, the results of our analysis will be affected.
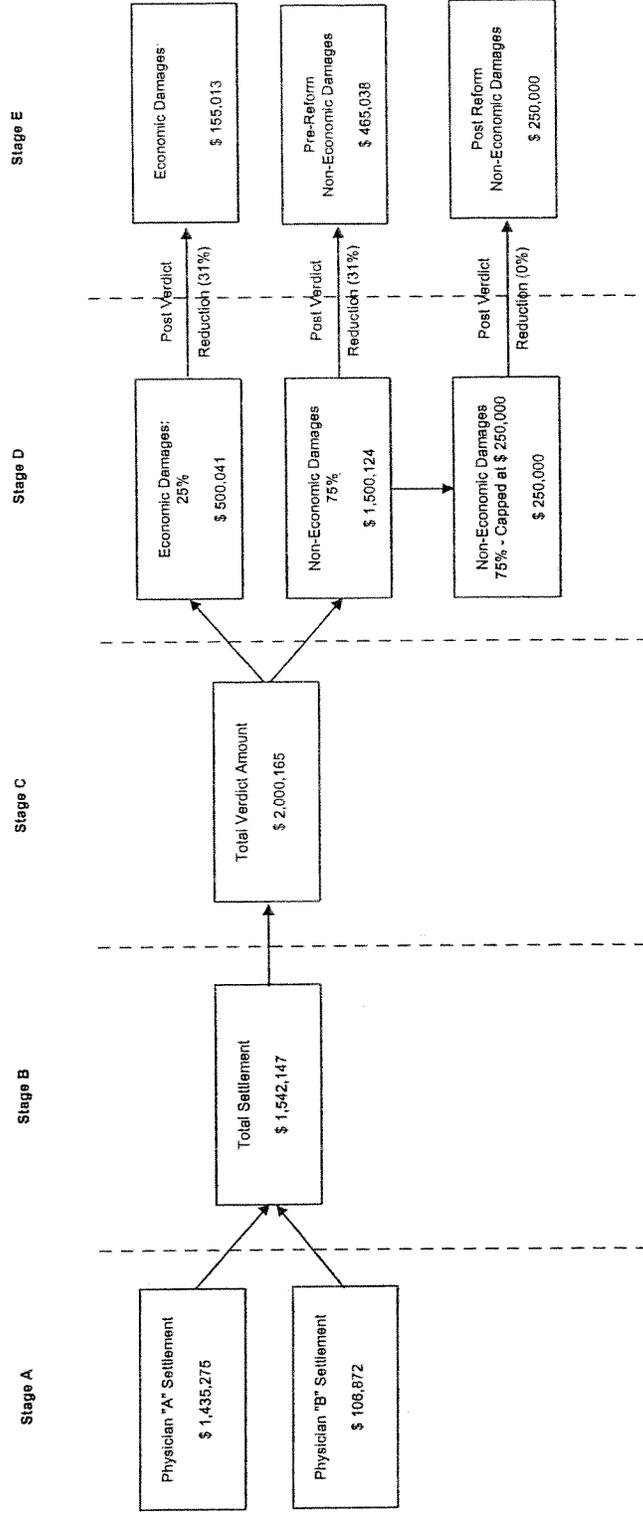
Furthermore, no simple theoretical model can reflect all of the forces underlying a complex insurance process. The various parameters and probability distributions within a simulation model reflect numerous assumptions. The underlying "true" distributions of the various quantities within the model may be significantly different from the estimated distributions.

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EXHIBITS

Exhibit 1

CITIZENS ALLIED FOR PENNSYLVANIA PATIENTS
Pennsylvania Physician Primary and CAT/Mcare per Claim Limits

	Primary	CAT/Mcare	Combined
Through 1996	200,000	1,000,000	1,200,000
1997-98	300,000	900,000	1,200,000
1999-2000	400,000	800,000	1,200,000
2001-02	500,000	700,000	1,200,000
2003-05	500,000	500,000	1,000,000
2006-08	750,000	250,000	1,000,000
2009 & After	1,000,000	-	1,000,000

M:\213CAP\[Exhibits.xls]Exhibit 1

Exhibit 2

CITIZENS ALLIED FOR PENNSYLVANIA PATIENTS
$250,000 Cap On Non-Economic Damages
Example of Simulation Model

Stage A	Stage B	Stage C	Stage D	Stage E

Stage A

Physician "A" Settlement
$ 1,435,275

Physician "B" Settlement
$ 106,872

Stage B

Total Settlement
$ 1,542,147

Stage C

Total Verdict Amount
$ 2,000,165

Stage D

Economic Damages:
25%
$ 500,041

Non-Economic Damages
75%
$ 1,500,124

Non-Economic Damages
75% - Capped at $ 250,000
$ 250,000

Stage E

Post Verdict
Reduction (31%)

Economic Damages:
$ 155,013

Post Verdict
Reduction (31%)

Pre-Reform
Non-Economic Damages
$ 465,038

Post Verdict
Reduction (0%)

Post Reform
Non-Economic Damages
$ 250,000

$$\text{Loss Savings} = \frac{\text{Pre-Reform Non-Economic - Post Reform Non-Economic}}{\text{Total Pre-Reform Loss}} = \frac{465,038 - 250,000}{155,013 + 465,038} = 34.7\%$$

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Exhibit 3

CITIZENS ALLIED FOR PENNSYLVANIA PATIENTS
Distribution of Physician Claims per Case

A. Texas DOI

(1) Insured Physicians per Case	(2) Hospital Claims	(3) Physician Claims	(4) All Claims	(5) Physician Distribution based on Claims	(6) Adjusted Number*	(7) Adjusted Distribution
1	540	6,070	6,610	62%	6,610	80%
2	268	2,003	2,271	21%	1,136	14%
3	116	840	956	9%	319	4%
4	34	365	399	4%	100	1%
5	18	156	174	2%	35	0%
6	8	91	99	1%	17	0%
7	3	39	42	0%	6	0%
8	4	20	24	0%	3	0%
9	-	17	17	0%	2	0%
10	2	38	40	0%	4	0%
Total	993	9,639	10,632	100%	8,230	100%

Avg Physicians per Case   1.29

Notes:

(2) Hospital Claims are those in which a hospital is listed as the "primary" insured.
(3) Physicians Claims are those in which a physician is listed as the "primary" inusred
(4) = (2) + (3)
(6) = (4) / (1)

* All Cases / Insured Physicians per Case

B. Florida DOI

Physicians per Case	Number of Cases	Percent of Cases
1	1,916	87%
2	235	11%
3	44	2%
4	9	0%
5	3	0%
Total	2,207	100%

Avg Physicians per Case   1.16

C. Selected for Pennsylvania Simulation

Number of Physicians	Percent of Cases
1	83%
2	14%
3	3%
4	1%

Avg Physicians per Case   1.21

M:\213CAP\[Exhibits.xls]Exhibit 3

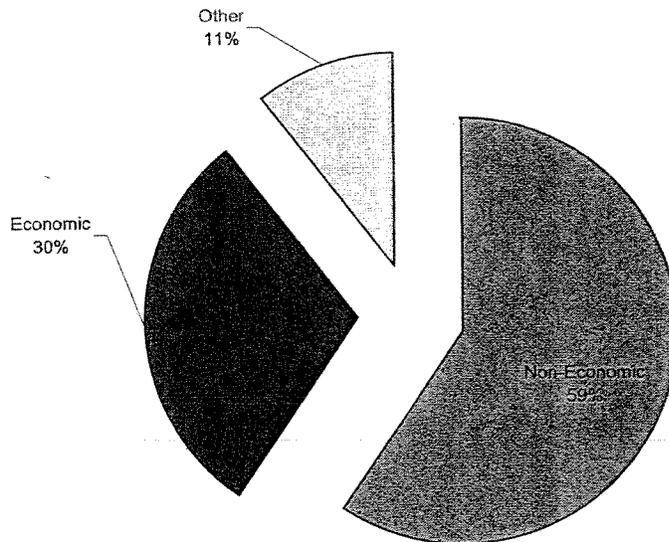Exhibit 4

CITIZENS ALLIED FOR PENNSYLVANIA PATIENTS
Economic/Non-Economic Apportionment of Malpractice Cases

Florida DOI
Physicians -- 1999- 2002

Economic - Wage
6%

Economic - Other
3%

Economic - Medical
17%
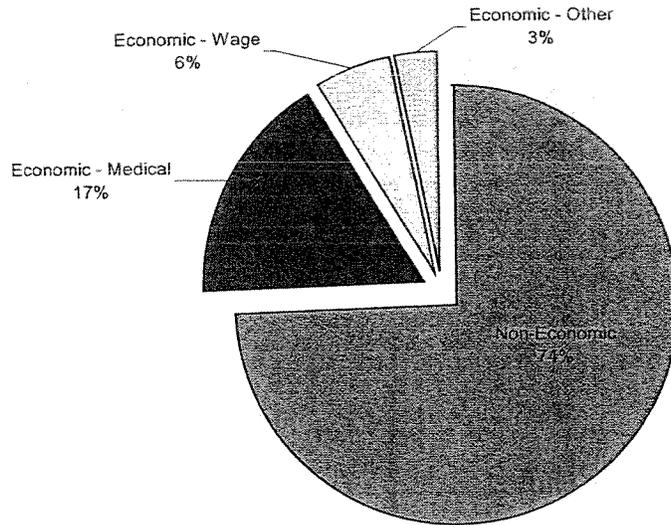
Non-Economic
74%

Texas DOI
Physicians -- All Years Combined

Other
11%

Economic
30%

Non-Economic
59%

Exhibit 5

CITIZENS ALLIED FOR PENNSYLVANIA PATIENTS
Distribution of Non-Economic Damage Percentage

Non Econ % Range	Mid-Point	Percentage of Cases			Number of Cases	
		Selected	Texas	Florida	Texas	Florida
0%	0%	3%	3%	12%	92	126
0% - 10%	5%	1%	1%	2%	36	20
10% - 20%	15%	2%	2%	3%	68	32
20% - 30%	25%	4%	4%	3%	99	35
30% - 40%	35%	6%	6%	5%	154	52
40% - 50%	45%	11%	11%	7%	298	70
50% - 60%	55%	9%	9%	9%	249	95
60% - 70%	65%	11%	11%	10%	316	107
70% - 80%	75%	17%	17%	12%	471	121
80% - 90%	85%	15%	15%	17%	404	178
90% - 100%	95%	10%	10%	19%	282	191
100%	100%	11%	11%	*	292	*

* used only Texas value as Florida data for this category appeareed unreasonable.

M:\213CAP\[Exhibits.xls]Exhibit 5

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Exhibit 6

CITIZENS ALLIED FOR PENNSYLVANIA PATIENTS
Distribution of Post Verdict Appeal Factor

Sustained Percentage	Frequency
0%	0%
5%	0%
15%	8%
25%	8%
35%	8%
45%	8%
55%	8%
65%	8%
75%	8%
85%	8%
95%	8%
100%	14%
105%	7%
115%	7%

Avergage Sustained	69%

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Exhibit 7

CITIZENS ALLIED FOR PENNSYLVANIA PATIENTS
NPDB Summary Statistics for Pennsylvania
Showing Effect of Grouping Filings into Claims

Year Closed	Based on Filings			Based on Claims (Grouped Filings)		
	Filings	Losses	Severity	Claims	Losses	Severity
1990	145	12,844,800	88,585	109	6,534,800	59,952
1991	1,095	180,414,200	164,762	892	137,580,450	154,238
1992	1,173	213,356,850	181,890	925	214,888,100	232,311
1993	1,122	206,270,350	183,842	899	198,780,350	221,113
1994	1,201	224,745,050	187,132	960	223,812,550	233,138
1995	1,268	230,182,700	181,532	947	210,250,200	222,017
1996	1,416	306,227,200	216,262	1,088	306,899,700	282,077
1997	1,362	315,504,800	231,648	1,052	310,724,800	295,366
1998	1,153	276,038,300	239,409	878	282,723,300	322,008
1999	1,434	350,541,300	244,450	1,074	314,781,300	293,092
2000	1,409	349,998,050	248,402	1,063	349,728,050	329,001
2001	1,567	419,908,800	267,970	1,263	441,755,300	349,767
2002	1,344	402,307,400	299,336	1,330	489,880,900	368,332
Overall	15,689	3,488,339,800	222,343	12,480	3,488,339,800	279,514

Note:
Approximately 20% of Pennsylvania NPDB filings represent a second filing on a given case resulting from a payment by the (excess) CAT fund. The reduction is understated in the most recent closing year (2002) as a significant number CAT Fund/Mcare filings are recorded in the year after the primary payment.
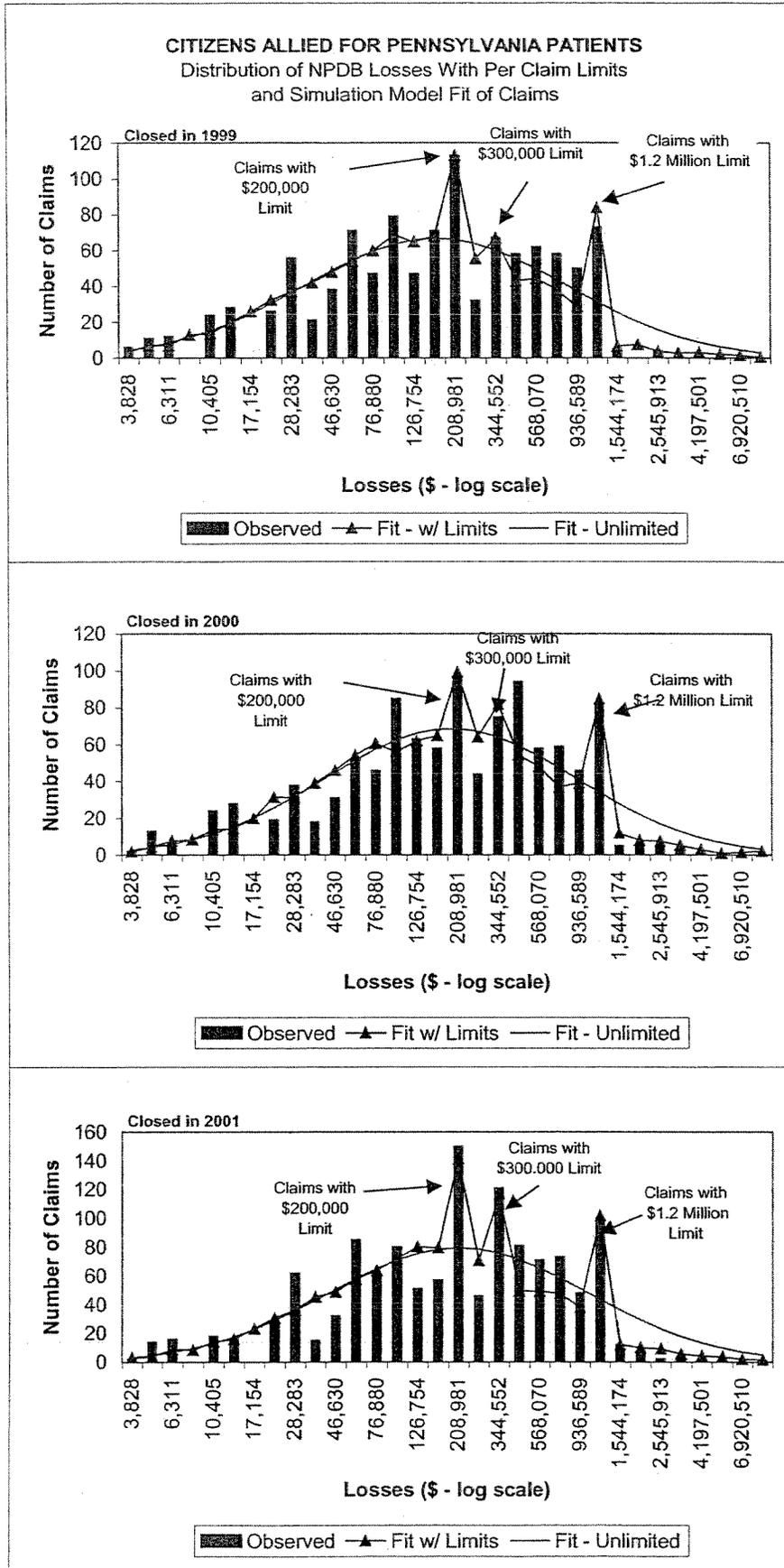
M:\213CAP\[Exhibits.xls]Exhibit 7

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Exhibit 8

CITIZENS ALLIED FOR PENNSYLVANIA PATIENTS
Calculation of Trended, Unlimited Loss Distribution
Based on NPDB Limited Claims

Year Closed	Untrended/ Censored Severity	Untrended Unlimited Severity	Trend Factor	Trended Unlimited* Severity	Severity Limited to 1.2 MM
1999	293,092	529,694	1.56	826,323	
2000	329,001	560,786	1.50	841,179	
2001	349,767	652,764	1.44	939,981	
Selected				870,000	453,305

* trended at 4% to 2004 occurrence year.

Year Closed	Percent of Claims with Limits			
	200,000	300,000	1.2 Million	Over 1.2 Million
1999	12%	5%	50%	33%
2000	8%	6%	50%	36%
2001	12%	11%	41%	36%

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Exhibit 9

CITIZENS ALLIED FOR PENNSYLVANIA PATIENTS
Distribution of NPDB Losses With Per Claim Limits
and Simulation Model Fit of Claims

Exhibit 10

Citizens Allied for Pennsylvania Patients
Relationship Between Loss and LAE
Based On Texas DOI Data

$y = 0.4275x + 5.5943$
$r^2 = 0.1825$

Log Loss

Log LAE

Milliman USA

m:\213CAP\Exhibit 10 Chart 1

♦EPA
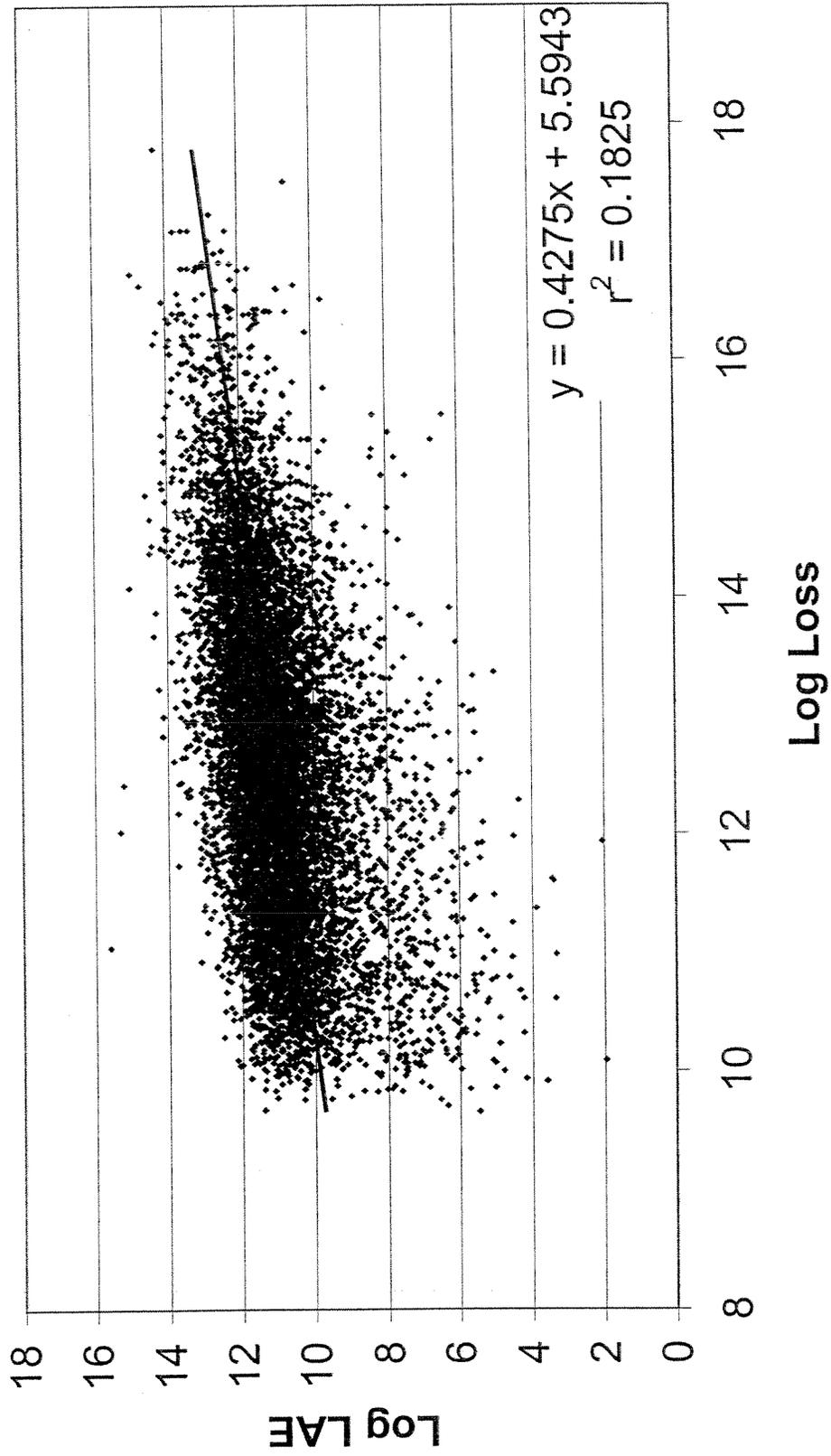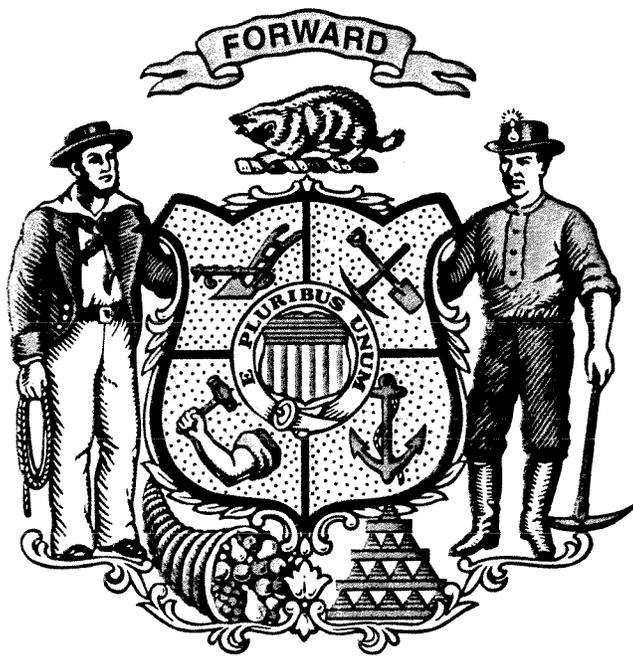
Second Cleanup Decision Finalized

Lower Fox River and Green Bay Site
Northeast Wisconsin
July 2003

U.S. Environmental Protection Agency and the Wisconsin Department of Natural Resources recently signed a document called a record of decision. The document describes the final cleanup plan for the sections (reaches) of the Lower Fox River from Little Rapids to DePere, DePere to the mouth of the river at Green Bay, and Green Bay itself.
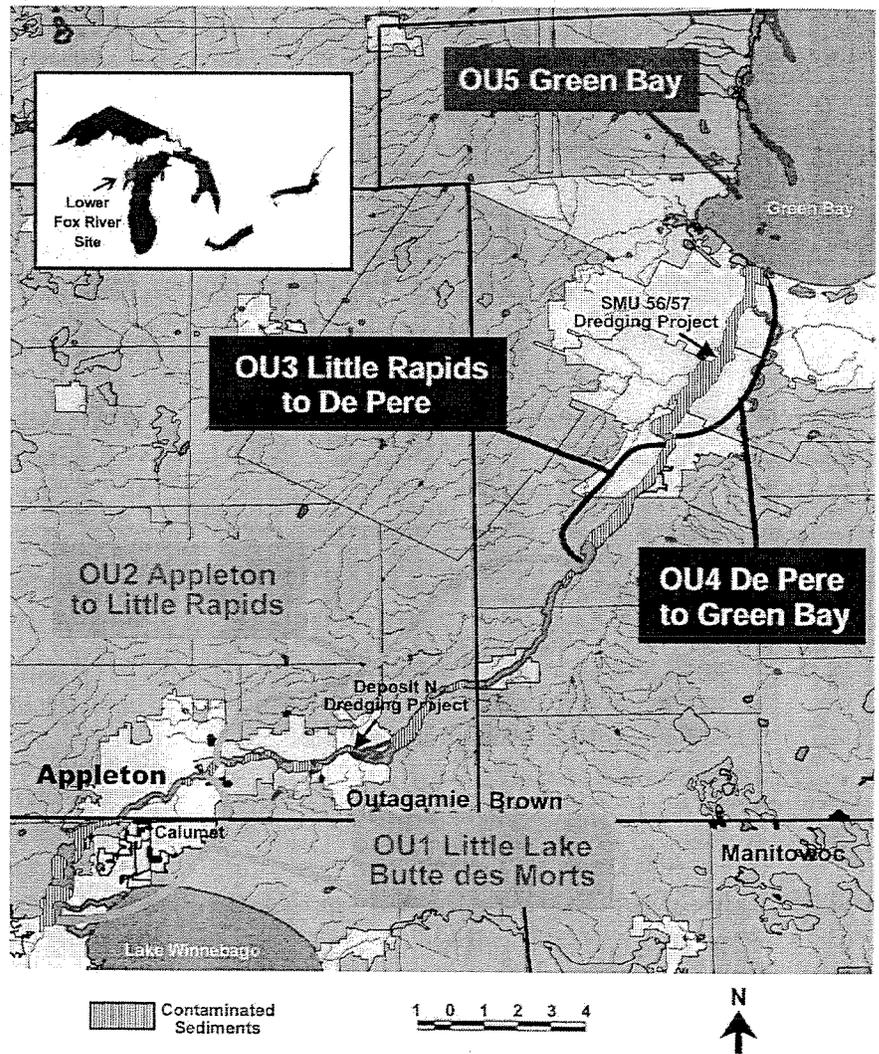
OU - This refers to an operable unit. An operable unit is a term used to describe a certain portion of a site based on similar features and characteristics. For ease of management, the Lower Fox River site has been divided into five operable units based on geographic location and differing river conditions. This decision covers OUs 3, 4 and 5.
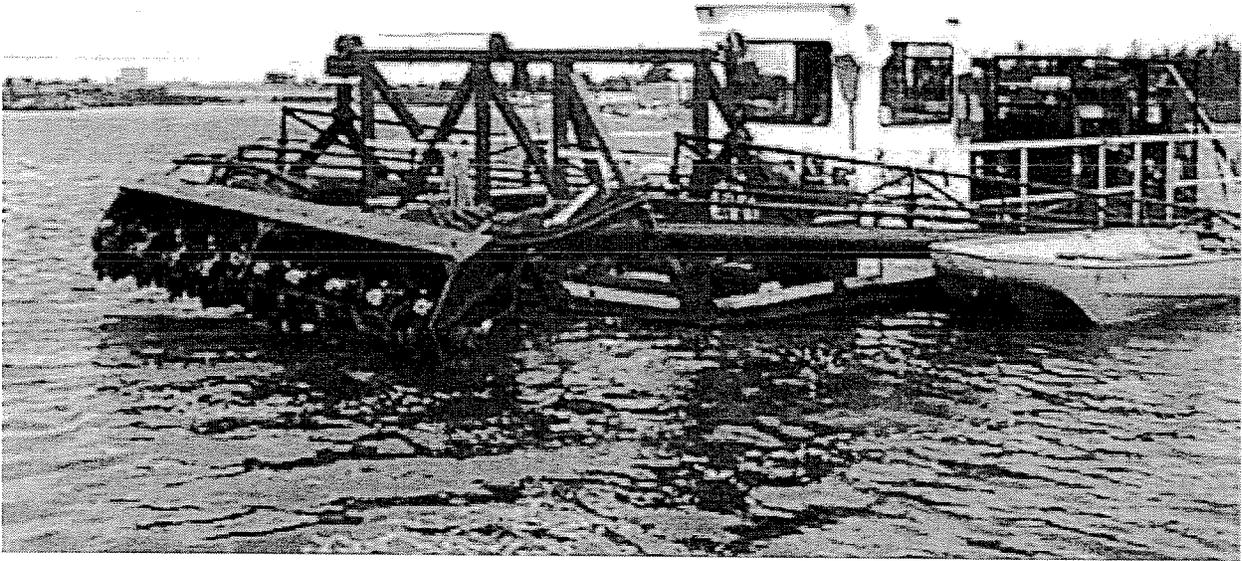
Dredging of the river may involve use of a hydraulic dredge, similar to this one.

Little Rapids to DePere reach cleanup (OU 3)

The cleanup of this reach will involve:

- Dredging 586,800 cubic yards of contaminated sediment from this section.

- Dredging an additional 9,000 cubic yards of contaminated sediment in OU 2 (Appleton to Little Rapids) just upstream from the Little Rapids Dam.

Estimated cost: $27.5 million

DePere to Green Bay reach cleanup (OU 4)

The cleanup of this reach will involve:

- Dredging 5.88 million cubic yards of contaminated sediment. This will remove about 90 percent of the PCBs in the river.

Estimated cost: $257.5 million

OUs 3 and 4 will have the same components:

- Pumping contaminated sediment through a temporary pipeline to settling basins (ponds).

- Letting sediment settle naturally, pumping water from settling basins, treating the water and returning the treated water to the river.

- Moving dewatered sediment to a nearby landfill for final disposal.

By removing the contaminated sediment, EPA and DNR estimate this reach of the river will have an average PCB level lower than the cleanup goal of 1 part per million (which is equal to one penny in $10,000). Capping in limited areas would also be allowed if that proved to be less costly than dredging, or if dredging alone were not sufficient. These activities will reduce the risk to people and the environment.

If landfill disposal is not available, EPA and DNR may use a technology called vitrification, which would be proposed to the public in an amendment to this record of decision. In this case, vitrification is the process of melting sediment to bind it into a granular, glassy, solid substance, rendering it clean.

Green Bay (OU 5)

EPA and DNR have selected monitored natural recovery as the cleanup plan for Green Bay. This cleanup relies on natural processes to break down, bury or dilute the PCBs in the sediment. It includes a program designed to monitor the levels of PCBs in sediment, water and fish tissue. The cleanup of Green Bay will also include dredging of PCB-contaminated sediment in the area near the mouth of the river. This dredging would be done along with the dredging of OU 4. EPA and DNR have chosen not to dredge the bay because:

- Removal of the PCBs in the river sediment will greatly reduce the amount of PCBs entering the bay.

- PCB levels in the bay are generally much lower than in the river.

- Active cleanup in the bay would not significantly reduce risk.

Estimated cost: $39.6 million

Objective of the cleanup

The objective of this cleanup is to reduce the risks posed to people and the environment from the PCBs in the Lower Fox River sediment in OUs 3, 4 and 5.

The next step

EPA and DNR will begin discussions with the companies considered potentially responsible for the PCB contamination about doing the cleanup. Design and cleanup planning will also begin during these negotiations. The selected cleanup plan will be refined during the design phase. Once the designs are completed and approved by EPA and DNR, a contractor will be hired to begin the work.

To determine how well the cleanup is working, after five years, EPA and DNR will review the cleanup to ensure that it is protecting people and the environment.

Background

PCBs were discovered in sediment and water in the Lower Fox River in the early 1970s. PCBs are of concern because they accumulate in the food chain. They have been linked to harmful effects in people, fish and wildlife. Because of these concerns, the manufacture of PCBs in the United States was stopped in 1977. Until the 1970s, PCBs were discharged into the river by area paper mills.

The Lower Fox River site includes approximately 39 miles of the Lower Fox River as well as Green Bay. The river portion of the site extends from the outlet at Lake Winnebago and continues downstream to the river mouth at Green Bay. The bay portion of the site includes all of Green Bay, which is 119 miles long and 23 miles wide. The site has been divided into five OUs. (See map on Page 1.) They are:

> OU 1 – Little Lake Butte des Morts
>
> OU 2 – Appleton to Little Rapids
>
> OU 3 – Little Rapids to DePere
>
> OU 4 – DePere to Green Bay
>
> OU 5 – Green Bay

EPA and DNR issued a record of decision in January 2003 selecting the cleanup plans for OUs 1 and 2. This record of decision is for the remaining three OUs. This type of phased approach was done to speed up the overall cleanup project while gaining experience to be used in future phases.
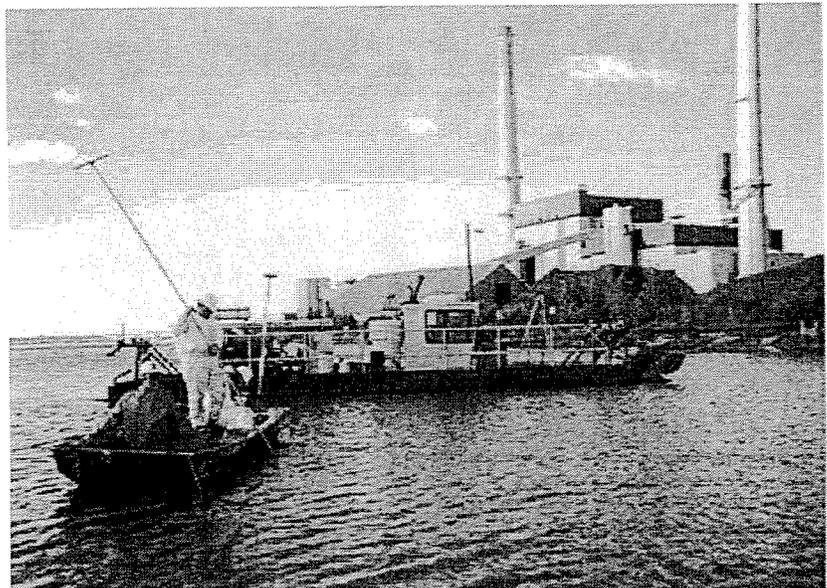
Monitored natural recovery includes sampling for PCB levels in fish, water and sediment.

For more information

For more information about the Lower Fox River and Green Bay site cleanup, please contact:

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Information repositories and administrative records

Copies of the record of decision and other documents related to the Lower Fox River cleanup will be available in the reference sections of:

- **Appleton Public Library**, 225 N. Oneida St., Appleton, Wis.; (920) 832-6170
- **Brown County Library**, 515 Pine St., Green Bay, Wis.; (920) 448-4381, Ext. 394
- **Door County Library**, 104 S. Fourth Ave., Sturgeon Bay, Wis.; (920) 743-6578
- **Oneida Community Library**, 201 Elm St., Oneida, Wis.; (920) 869-2210
- **Oshkosh Public Library**, 106 Washington Ave., Oshkosh, Wis.; (920) 236-5200

An administrative record, which contains detailed information upon which the selection of the cleanup plan was based, will be available at the DNR office, 801 E. Walnut St., Green Bay; DNR Bureau for Remediation and Redevelopment, 3rd Floor, 101 S. Webster St., Madison; and EPA Records Center, 7th Floor, 77 W. Jackson Blvd., Chicago, Ill.

Lower Fox River: Second Cleanup Decision Finalized