State Planning Grant Pilot Project

Modeling of Prospective and Retrospective Reinsurance

Impact on the small employer market

Final Report by

Pool Administrators Inc.

Executive Summary

Small employers are concerned about the volatility of health insurance premium increases because they do not want to begin a benefit they are unable to continue. The volatility of premium is driven by claims costs in general, and by unexpected catastrophic claims in particular. Reinsurance has been and will be the insurance industry's solution to stabilizing future claims costs and assuring more predictable profits. Therefore, a state reinsurance program should stabilize insurance premium rates and more small employers should begin purchasing and offering insurance to their employees.

What is reinsurance? Reinsurance provides the same protection for insurers as the insurers provide for their policyholders but reinsurance is behind the scenes and is a contract between the reinsurer and the insurer. A key difference is that reinsurance allows insurers to treat all risks the same because reinsurance is transparent to employers and the high risk persons that have the insurance coverage.

How does reinsurance work? A reinsurer reimburses the high cost claims of the high risk people that the insurers cover with their insurance policies. Reinsurance can work on a prospective or on a retrospective basis. In other words, prospective coverage begins before the claim is paid and retrospective coverage begins after the claim is paid. Under prospective reinsurance the insurer must pick expected eligible high risks and put them in a reinsurance pool. Some of those pooled risks incur high cost claims and some don't. Under retrospective reinsurance the insurer is automatically covered for all eligible risks and all eligible claims are reinsured.

Why is reinsurance so effective? Reinsurance can be integrated into other small employer policy strategies and can provide synergies with additional incentives for small employers to offer health insurance to their employees. Also, reinsurance costs can be controlled by changing the reinsurance coverage and reinsurance benefit provisions so it is compatible with a state subsidy that may be limited through annual appropriations.

How did we test the effectiveness and how does reinsurance fit into a state strategy? The primary objective of this project was a test of what happens to insurance prices when actual Kansas insurer claims are reimbursed under two prospective and two retrospective reinsurance designs. The reduced claims costs from the preferred reinsurance design will be applied to average premium rates to model the purchasing behavior of small employers if a standard plan is offered at the lower premium rates. A targeted policy strategy will be developed to substantially reduce the number of uninsured in Kansas. The findings of this study will be useful to other states adopting a market-based solution.

What are the results of the test? The results of the modeling of actual Kansas claims for three years produced some important observations on the characteristics of the small employer market.

- 75% of the claims incurred in the entire small employer market are concentrated in groups of 2 to 25 employees. However, the claim costs per person are the

same. Therefore the 2 to 25 market segment, and the insurers that provide coverage in that segment, will get the most benefit from reinsurance.

- Approximately 5% of the insured small employer population accounted for almost 62% of the claims incurred in the entire market. In other words, a very few risks account for most of the claims costs in the small employer market.

- This extreme concentration of claim volatility in the small employer marketplace, particularly for groups of 2 to 25 employees explain why insurers prefer to offer coverage with less claim volatility and it is no surprise that insurers prefer to write larger size groups.

- The modeling of the four different reinsurance designs produced significantly different amounts of claims reimbursement and net losses if reinsurance premium is charged to the insurers. In other words, the modeling demonstrated that reinsurance design can be used to control the amount of claim dollars that could be subsidized by a state or could be spread to the entire insurance market through a reinsurance mechanism.

What is the recommended reinsurance design based on the test?

- Retrospective reinsurance with 90% reimbursement of paid claims between $5,000 and an annual maximum of $75,000. State subsidization of these claims would further reduce the volatility of the small employer market. Even if no subsidy were available, an assessment of the net losses based on total health insurance would reduce small employer premium by $285 annually for each insured person in the small employer market.

- A combination of both retrospective and prospective reinsurance would provide the greatest protection for insurers. In other words, the insurer would be guaranteed reimbursement of all eligible claims up to the $75,000 annual limit but the insurers then could choose to purchase additional prospective reinsurance for claims between $75,000 and $1,000,000 if the risk is ceded at least 30 days prior to the plan anniversary date in exchange for reinsurance premium at a cost that is below the carrier's cost for reinsurance through some other intermediary.

- All of the carriers in the small employer market experience a reduction in their total claims after assessment. While some of the decreases are not as drastic as others, the disproportionate losses are partially subsidized or at least they are equitably spread amongst the carriers in the state's total health insurance market.

Conclusion: This reinsurance structure can reduce or eliminate the need for insurers to reserve for unexpected catastrophic claims. The reserves in all markets could possibly be eliminated if these excess costs were completely adequately subsidized by federal or state funds.

Background and Processes Followed

Background

A much repeated concern among small employers is the volatility of health insurance premium increases. It is a disincentive to offer insurance because employers do not want to begin a benefit they are unable to continue. The integration of reinsurance into the cumulative small employer policy strategies of a state should provide valuable premium price stability and should create an additional incentive for small employers to offer health insurance to their employees. State mandated reinsurance pools have proven to be cost effective mechanisms to improve access to health insurance for small employers and their employees but while access has been improved the affordability of small employer coverage is still an open issue. The most popular structure for programs comes from the original design and implementation in 1990 of the Connecticut program followed by nearly 30 state pools based upon a very similar though slightly different NAIC Reinsurance Model. In recent years, some modifications to the Connecticut and the NAIC mechanisms have been proposed and one or two have been implemented with success, including Healthy New York's retrospective reinsurance program. This program appears to have addressed the affordability issue with significant premium decreases, lower than expected claims and high enrollments, presumably associated with the lower insurance premium rates.

Key Elements Underpinning the Reinsurance Strategy

Pooling stabilizes the marketplace by spreading the risk of adverse selection associated with a guaranteed issue environment in the small employer markets. If you spread enough risk and cost then all insurers accept all risks. Then, if you equitably share net losses there should be no insurance risk selection and all insurers should fairly market with competitive prices rather than avoiding high risks.

- Using a reinsurance mechanism everyone is treated equally. Under the reinsurance model, high risk groups with poor health history have a better chance of being treated like their healthy counterparts by the insurers. This happens because the reinsurance takes place in the background and is transparent to the employer, its employees and their dependents.

- The pools create the opportunity to equitably reduce the costs of high risk groups to the insurers that write them and they provide the ability to equitably spread costs within and outside of the small employer market. The higher the claims volume the greater the ability to reduce costs by spreading them out of the small employer market as a way of reducing small employer premium rates.

Project Scope and Objective

The primary objective of the State Planning Grant Project is to test the cost/benefit implications of controllable claim fluctuations, pricing stability, and risk acceptance by insurers using alternative reinsurance mechanisms and risk or cost spreading methodologies. The quantified cost reductions from the modeling were applied to average premium rates in order to test the propensity for small employers to buy health insurance with reduced costs. This improved propensity to purchase health insurance will be applied to the market as a whole in order to project the resulting potential to reduce the uninsured small employer population. Since that particular population represents the majority of uninsured Kansans the targeted policy strategy developed during this pilot project has the potential to substantially reduce the number of uninsured. The findings of this study will be useful to other states adopting a market-based solution.

Scope of the Modeling and This Report

Four alternative reinsurance mechanisms have been modeled to quantify the impact of each on premium cost. Later work will complete the project by using the results of the modeling work to project small employer insurance take-up rates. After that work is complete, and in combination with the results of the modeling work, the impact analyses will provide valuable information in selection of the most effective reinsurance approach.

The first mechanism modeled was prospective reinsurance with a $5,000 attachment point, 10% retention, and reinsurance premium on ceded risks paid by the ceding insurer (NAIC Model). This mechanism is similar to the one tried by many states using the NAIC Model Act for Reinsurance, except that it is not restricted to new business only . The Model Act allows for either voluntary or mandatory pools. Only the mandatory NAIC pool is being considered for modeling since the voluntary pools have not demonstrated adequate participation by large insurers to have any significant financial impact on the market. They have served well as a safety net for insurers but that is not germane to the modeling objectives.

The second mechanism modeled was prospective reinsurance with first dollar coverage of ceded risks, no retention, and no upper limit on coverage (Modified NAIC Model). As with the NAIC Model there is a reinsurance premium that must be paid by the ceding insurer for ceded risks and it too does not restrict ceding to new business only. This was the original design for the Connecticut mechanism which was created in 1990, however, the Connecticut design was changed prior to implementation to incorporate a $5,000 attachment point to match the HMO federal qualification criteria and it was later modified to restrict ceding of existing business to smaller size groups that have been reinsured by the same carrier for three consecutive years.. Connecticut has consistently been the largest and most successful of the NAIC prospective pools. Both of these mechanisms provide behind-the-scenes identification of high risks and their associated claims which can be spread as well as coverage of the truly high catastrophic claim costs, and thus the highest risk. Also, the amount of those claims can be controlled by adjusting

the reinsurance premium rates since insurer utilization of the pool is based on the risk (cost) vs. return (benefit) of the pool's reinsurance offering.

The third mechanism modeled was retrospective reinsurance for all paid claims applicable to a set of selected diagnosis codes (Retro Diagnosis) for all small employer insured business. This type of reinsurance reimburses all paid claims that contain one of the pre-selected high risk diagnosis codes within a reinsurance corridor of coverage between $5,000 and $75,000 per annum. This type of reinsurance should capture a significant amount of claims dollars but the amount can be controlled by the inclusion or exclusion of particular diagnosis codes. The resulting claims are a function of the morbidity of the diagnoses eligible for reinsurance and it will produce lower total claims reimbursement than a fully retrospective pool that covers all claims within the same corridor of reinsurance.

The fourth mechanism modeled was retrospective reinsurance for all paid claims with the same reinsurance corridor as the Retro Diagnosis mechanism for the same small employer insured business (Full Retro). It should produce the highest losses of the mechanisms being considered but it does not provide the unlimited reinsurance coverage that the prospective models provide. This retrospective reinsurance coverage provides the same benefits as the retrospective mechanism currently being used in New York; however, New York limits eligibility of claims to only those paid on plans sold through the Healthy New York Program. These plans have low income eligibility criteria that are not considered at this point in the modeling work. Losses in these last two retrospective mechanisms are not as controllable because there is no reinsurance premium to reduce net reimbursements and insurers will cede all eligible risks regardless of the expected claims.

Once the costs associated with the various reinsurance mechanisms are estimated then the impact on various entities assuming those costs were examined. Analysis included spreading the costs among the small employer and the insured portion of the large employer market. Commentary has been provided about a broader assessment across the entire state insurance industry, and appropriation of state funds or federal funds to support a public state reinsurance mechanism although no information is currently available to quantify these alternatives. If costs are spread to another portion of the market then that portion of the market will bear a proportionate burden of high cost risks in the small employer market. In other words, the large group market will subsidize the high cost portion of the small group market. This may be an equitable result since the large group market is much more able to absorb increased costs due to its absolute size and because of the significantly larger relative size of the groups that would be impacted by the cost spread. Also, it can be demonstrated that the large group market may be receiving some benefit from guarantee issue/renewal and regulated insurance rates in the small employer market and this would argue for some amount of cross subsidization.

Project Approach

The project team consisted of Pool Administrators Inc. (PAI) as the principal consultant with information technology consulting by MIPSystems Company (MIPS) and with actuarial consulting by Milliman USA (Milliman). The collective work of these consultants will also be referred to as the work of the "consulting team". The approach to the project involved the compilation of data profiling the small employer population. Kansas has an unusually rich set of data because it has collected actual claims from most of the insurers doing business in the state for several years. This data is contained in the Kansas Health Insurance Information System (KHIIS).

The approach next involved the analysis of the data for modeling purposes. The analysis and "scrubbing" of the data eliminated duplicate and redundant data elements or records and the combination of related records to put them into a form for modeling the four mechanisms with the reinsurance system software that PAI uses for the administration of other similar reinsurance mechanisms. This preparatory work identified several key findings for future consideration for implementation and insurer reporting accuracy. **Specifically, the data is not segmented by market (small employer vs. large employer) nor is it organized in a form for reinsurance reimbursement of claims on either a prospective or a on a retrospective basis.** Also, the analyses of the claim data in KHIIS as collected by the Kansas Department of Health and Environment (KDHE) included most, but not all of the state's insurers and some reporting periods appeared to lack a complete reporting by all insurers. After significant "scrubbing" to organize and cull redundant data, and subsequent request/submission of the available missing data, the unit costs on a per member per month basis were deemed reasonable by the consulting team.

The modeling phase of the project involved the determination of small employer groups contained in the KHIIS since there was no specific identification of small employer market claims in the database. Also, the consulting team developed the reinsurance premium rate tables for the prospective reinsurance mechanisms using Kansas standard plan rate filings and traditional reinsurance rating factors from PAI's experience with other similar reinsurance mechanisms. The remaining preparatory steps included the selection of high risk diagnosis codes to be used for the modeling of the ceding process and for the claims eligibility criteria in the diagnosis based model. The reinsurance benefits and the reinsurance rates were then loaded into four versions of the reinsurance system software's database.

Next, the ceding process for the prospective mechanisms had to be modeled to determine the employees or dependants from the scrubbed membership whose claims would be reinsured. No ceding per se was necessary for the retrospective mechanisms since all risks were eligible for reinsurance coverage and the only criteria for reimbursement was the existence of eligible claims. The ceded risks and eligible claims were then processed by the reinsurance system software to produce the resulting reimbursement amounts for each of the four mechanisms.

The modeling of the expected results used the reinsurance system's output of the processed reinsurance premium (as applicable) and the processed claims for the derived small employer group population to calculate the net reimbursement as well as per member claim cost for each of the four modeled mechanisms. Observations were developed for the modeling results for each of the mechanisms including the potential financial impact of the net losses on the small employer's premium rates and insurer's claim costs. Recommendations were then made on the reinsurance structure that best fits the characteristics of the Kansas small employer market and best meets the project objectives.

Compilation of data profiling the Kansas Small Employer Population

The sources of this information included, but were not limited to, the Kansas Small Employer Health Insurance Survey, Kansas census data, and information available from the Kansas Commerce Department. Other information collected in this early phase of the project included Kansas health insurance premiums in the small group market, including base rates, the allowable Kansas small employer group rating factors, and the state's premium and unemployment tax rates.

A request for health claim related data relating to Kansas small employer groups was made to KDHE. To prepare for this request, the consulting team reviewed the insurer reporting requirements contained in Edition III of the KHIIS Technical Manual and discussed the data modeling needs with representatives from KDHE and Kansas Health Institute (KHI).

Determination of Small Employer Groups

The information collected by the KHIIS is a compilation of information from the largest insurers in the Kansas health insurance market. It includes fully insured, self insured and partially self funded business for both large and small groups, as well as information pertaining to the individual market. Although the individual market information is identifiable there are no identifiers present to distinguish between small employer and large employer groups. Therefore, in order to determine the small employer groups reported on, in the data, the following criteria were used by KDHE when extracting the data.

1. Across all calendar years, every group containing fewer than 51 employees with 12 full months of coverage in any given year was identified. All groups meeting the criteria in any year were considered to be a small employer group in every year for the purpose of this extract.

Using the list of groups identified in step 1, membership, claim summary and claim detail for all employees and dependents in any of those groups was extracted. This extract

occurred regardless of whether the specific employee had 12 full months of coverage in the year.

2. The consulting team provided the definition to KDHE such that it would encompass all data that could be needed for the study. PAI then received a KHIIS data set of small employer (as defined) membership and claims data that KDHE extracted from its database in accordance with the mutually agreed upon selection criteria, HIPAA Privacy and Administrative Simplification practices, and a confidentiality statement. The membership and claim data was successfully loaded onto the dedicated server of PAI.

Initial examination of the data by the consulting team showed that it would not be possible to model the ceding process without significant "scrubbing" to remove or manipulate records that did not conform to the specifications in the KHIIS Technical Manual.

The Scrubbing Process

The first step of scrubbing the data started with 7,057,858 records which needed to be reviewed for completeness, consistency and relevance. Removed records included exact duplicates, non medical products, and health plans that were not relevant to the modeling. The remaining plans included Health Maintenance Organization (HMO), Preferred Provider Organization (PPO), Indemnity (IND) and Point of Service (POS) plans. All records with invalid birth dates were also removed. At this point, 5,785,127 records remained that had been scrubbed and all incomplete and irrelevant or unnecessary data removed.

The next step in the process was to combine the data elements to form one record for every unique member identification numbers contained in the remaining data elements. This process involved an assumption that: If there were two member identifiers in an employer group that appeared to be the same but technically were slightly different, one of the membership identifiers was changed to make them consistent. As a result of this process there were no records dropped and unique member identifiers were formed. After the unique member identifiers were formed it was then possible to identify the unique insurers and their associated small employer groups. There were 18 insurers and 940 unique small employer groups resulting from this consolidation.

At this point in the process each of the quarterly reported membership and claim records were combined by year for each member. This combination resulted in 913,388 member records. Next, all relationships that were identified as invalid were removed which resulted in a "scrubbed" membership of 873,098 unique members for the entire time period covered by the KHIIS data set received from KDHE.

In the process of scrubbing the data, it was determined that some of the members had a gap in their coverage despite the fact that there were claims for each period. It was

assumed that the member was covered for every period in which claims amounts appeared in the KHIIS data set.

After the data was scrubbed, the team found that certain information was missing from the supplied data. This related to months reported by some insurers and the date basis used for reporting by the largest insurer. Consequently, KDHE requested the missing data from the affected insurers. The findings of the scrubbing process and the analysis of missing data are contained in the Appendix to this report since it may be necessary to tighten up the insurer reporting instructions if KHIIS is used for reinsurance reporting in Kansas. The modeling proceeded as planned with the understanding that it would be subsequently tested again after the missing data was provided. PAI subsequently tested the average claims amounts per member per month for each type of reinsurance and found that there was no significant impact on the modeling results.

The Modeling of the Ceding Process

(Note: Reinsurance "ceding" is a single term that describes the process to determine the risks which are to be reinsured. When a risk is ceded it becomes eligible for reimbursement of the claims to the insurer(s) for their claims paid on that risk subject to the limits of the reinsurance coverage).

The next step in the process was the determination of the members from the scrubbed membership who would be ceded to the four reinsurance mechanisms. The key characteristics related to ceding in the four reinsurance mechanisms were as follows:

The full retrospective reinsurance mechanism (Full Retro) reinsures all insured members and reimburses the insurers for their claims within a certain corridor of coverage ($5,000 to $75,000). The retrospective reinsurance mechanism based on diagnosis code (Retro Diagnosis) reinsures any insured member who had a claim or claims bearing specific diagnosis codes for a given year and reimburses insurers for their claims within the same corridor as the Full Retro mechanism. For both of these reinsurance mechanisms there was no need for judgment in the ceding process, as the criteria to reinsure these members were based on information contained within the KHIIS data set. The third and fourth reinsurance mechanisms modeled were the prospective NAIC Model and the Modified NAIC model. These two mechanisms require insurers to decide which insured members to cede to the pools hence the ceding process had to be simulated for modeling purposes.

The consulting team simulated the ceding process for the prospective reinsurance pools by using diagnosis based ceding criteria based on PAI's experience with other insurers that ceded risks to nearly twenty of the pools they have administered. In essence, all risks with claims in the selected high risk diagnosis codes in the preceding year were selected for ceding into both prospective pools. Milliman observed that "this diagnosis based ceding criteria yields good results (i.e. patients who met the criteria had much higher than average claims)".

Milliman also provided the reinsurance premium rates to be used in the modeling of the Modified NAIC model and PAI calculated the related premium rates for the NAIC Model using benefit relativities to reflect the different attachment point and retention amounts. All of the reinsurance premium rates were based on filed insurance rates for a comprehensive standard plan in Kansas factored up by multiples of 500% or 150% respectively for reinsurance of individual employees and dependents or reinsurance of the whole small employer group (containing a mix of members with and without claims).

Milliman's assumptions for the future modeling of reinsurance ceding were as follows: Kansas historical data is representative of future patterns; using a $5,000 fixed attachment point, means that more patients will meet criteria in 2005 than in 1999 due to trended medical claims; variations in benefit design will impact the final modeling results; and the probabilities used for ceding patients will be somewhat arbitrary and based on opinions of experts familiar with carrier's practices. In other words, significantly different claim reimbursement levels will occur if carrier accuracy in ceding changes from the accuracy assumed in the modeling. One ceding process was developed and then applied uniformly to the small employer membership as identified in the KHIIS data set.

Highlights of the Modeling Results

After the small employer group population was derived from the information collected by KHIIS and the ceding process was simulated by specifying the diagnosis codes it was then possible to load that portion of the information into the reinsurance system in order to model the four types of reinsurance pools previously described. The design of the fully retrospective pool called for all of the employees and dependents with coverage and claims through a fully insured small group health plan to be reinsured by that reinsurance mechanism, therefore that population is used in the following paragraphs to discuss some observations and characteristics of the entire derived small employer market.

Table I reports the claims by group size for the small group market in the state of Kansas as contained in the information collected from the insurers by the KHIIS. The table indicates that **on average, 75% of the claims incurred in the entire market are concentrated in the groups of 2 to 25 employees.** It also may appear reasonable to assume that this segment of the population has higher claim morbidity than the rest of the population, but it must be considered that groups of 2 to 25 employees comprise a very significant percentage of the small employer population (groups of 2 to 50 eligible employees). MEPS reported that the average of the population (for groups of 2 to 24) for 2000 and 2002, two of the three years modeled, was 73.5% of the total small employer population (groups of 2 to 50).

Table I Claims Paid By Insurers in the Entire Small Group Market, by Group Size

Group Size	2000	2001	2002
2-5	$62,841,112	$103,928,448	$83,672,921
6-10	$40,409,981	$67,063,188	$55,537,312
11-15	$33,018,725	$50,952,472	$44,589,197
16-20	$27,117,045	$40,295,148	$33,881,354
21-25	$22,306,725	$33,383,254	$29,643,199
26-30	$15,199,241	$24,524,944	$20,920,673
31-35	$17,840,677	$22,990,313	$18,636,263
36-40	$12,617,614	$18,674,574	$16,111,390
41-45	$11,667,881	$15,273,697	$13,763,353
46-50	$10,744,166	$11,078,976	$9,955,472
	$253,763,166	$388,165,014	$326,711,133

For the years reported in table II, the claimant count for the year 2000 was 145,564; for 2001 the claimant count was 176,229 and for 2002 the claimant count was 192,136. These numbers represent the number of insured risks which generated any claims in those years regardless of whether the claimant accumulated enough claims within the year for reimbursement to the insurer. The second key observation from working with the data is that for all of the claims incurred over the course of each year, **approximately 5% of the insured small employer population accounted for almost 62% of the claims incurred in the entire market, or in other words, there is extreme concentration of claim volatility in the small employer marketplace, as well as the potential to adversely impact the price stability in those smaller group size segments of the small employer market.** Due to the population by group being small, and the potential for costs to exceed premiums by a significant amount, an insurer has an understandable incentive to price for that potential exposure, or unknown risk. Although per member per month cost is consistent across group sizes **it is also evident that a group of 46 to 50 is more likely to be able to fund claims in excess of the per member per month cost than a group of 2-5 employees.**

Table II Claims per claimant per month

	2000		2001		2002	
Group Size	**Claimants**	**Claims PMPM**	**Claimants**	**Claims PMPM**	**Claimants**	**Claims PMPM**
2-5	33,364	$157	42,095	$206	48,699	$143
6-10	24,425	$138	30,893	$181	34,127	$136
11-15	20,087	$137	24,786	$171	26,420	$141
16-20	16,252	$139	18,859	$178	20,576	$137
21-25	12,995	$143	15,940	$175	16,950	$146
26-30	9,713	$130	11,880	$172	12,442	$140
31-35	8,653	$172	10,619	$180	11,039	$141
36-40	7,511	$140	8,603	$181	9,155	$147
41-45	6,606	$147	7,524	$169	7,613	$151
46-50	5,958	$150	5,030	$184	5,115	$162
	145,564	$145	176,229	$184	192,136	$142

Results and Recommendations

With the completion of the scrubbing, the identification of the small employer group members and the ceding, the modeling of the four types of reinsurance pools took place and the information generated was analyzed. The information presented in the following section, unless otherwise noted, is from the KHIIS data set after having been run through the reinsurance system, and is presented on a three year average basis for the years 2000 through 2002.

	Full Retrospective	Retrospective Diagnosis Based	NAIC Model	Modified NAIC Model
Reinsurance Premium Earned	None Charged	None Charged	$23,727,314	$45,289,443
Claims Reimbursed by the Pool	$107,172,304	$68,664,613	$40,616,272	$76,004,326

The first two pieces of information that were analyzed following the running of the reinsurance models were the reinsurance premium earned and claims reimbursed by the respective pools. The retrospective pools do not charge premium to the insurers ceding risks to the pools, whereas the NAIC Model and the Modified NAIC Model do charge premium. The most significant difference between the two NAIC based model pools is the deductible and the retention. The NAIC model pool has a $5,000 deductible and retention of 10% of the subsequent $50,000 in claims where the modified NAIC model has neither. The absence of a deductible and retention, or, put another way, first dollar coverage, results in approximately $35,388,054 in additional claims being reimbursed by the Modified NAIC Model.

The greatest dollar amount of claims that would be reimbursed by the four pools modeled would be those of the fully retrospective pool (Full Retro), followed by the Modified NAIC Model, the Retro Diagnosis and the NAIC Model. The Full Retro reimburses all claimants and the greatest concentration of claims is within the corridor of coverage that it provides. All claims, between $5,000 and $75,000 are eligible for reimbursement. In addition, the majority of the insured population with claims above $5,000 fall within this corridor, therefore more of the claims dollars would be covered. The Modified NAIC Model reinsures all paid claims with no limit, other than the limits imposed by the insurance policy issued to the employer group. **A very important positive consideration for price stability is the Modified NAIC Model design feature to fully reimburse the high cost claims above $75.000 paid by the insurers, as selected and as ceded prospectively.**

	Full Retrospective	Retrospective Diagnosis Based	NAIC Model	Modified NAIC Model
Reinsurance Premium Earned	None Charged	None Charged	$23,727,314	$45,289,443
Claims Reimbursed by the Pool	$107,172,304	$68,664,613	$40,616,272	$76,004,326
Net Reinsurance Losses	$107,172,304	$68,664,613	$16,888,958	$30,714,883

The next step in analyzing the results of the modeling of the four pools was to determine the net reinsurance losses of the pools by netting the gross reinsurance premium earned against the gross claims reinsured. In doing this, **the Full Retro again reimbursed the highest dollar amount of claims, followed by the Retro Diagnosis while the net reimbursement of the Modified NAIC Model and the NAIC Model are significantly diminished due to the payment of premium by the carriers ceding risks to the pool.** While the Modified NAIC Model did reimburse a greater dollar amount of claims than Retro Diagnosis, it also introduced new costs to the market in the form of reinsurance premiums in the amount of $45,289,443. **Based on the modeling results, the Retro Diagnosis would reinsure the same high risks as the modified NAIC pool with a reduced administrative burden on the carriers ceding risks to the pool.**

	Full Retrospective	Retrospective Diagnosis Based	NAIC Model	Modified NAIC Model
Total Derived Population	242,100	242,100	242,100	242,100
Net Reinsurance Losses	$107,172,304	$68,664,613	$16,888,958	$30,714,883
Cost of Reinsured Claims Per Insured	$443	$284	$70	$127

Once the net reinsurance losses of the pools have been determined, it was then possible to determine the impact of the assessment of those losses on the enrollees of the small employer market. Based on the information modeled from the KHIIS data set, the entire population of the derived, fully insured small employer market averaged 242,100 people for the three years. In order to determine the impact of the assessments on the small employer market it was necessary to determine what the cost of the claims that have been reinsured would have been to the small employer market had they not been reinsured. To do this, the total reinsured claims for the pool were divided by the total population of the

data set to arrive at an annual reinsured claim cost per insured for each of the modeled pools.

	Full Retrospective	Retrospective Diagnosis Based	NAIC Model	Modified NAIC Model
Cost of Reinsured Claim Per Insured	$443	$284	$70	$127
Assessment per Insured in the Small Employer Market	$158	$101	$25	$45
Reinsured Claim Cost Spread Outside of the Small Employer Market	$285	$183	$45	$82
Range of Reduction of Claim Costs to Small Employer Market ~~on a Per Member Per Year Basis,~~ as a % of Insurance Premium	5.95% to 12.91%	3.8% to 8.25%	.9% to 1.95%	1.7% to 3.69%

The final step in the modeling process is the determination of which pool would have the greatest impact on the fully insured small employer health insurance market in the state of Kansas. In a broad sense, and based on the information analyzed, **it would appear that the retrospective reinsurance pools would provide the most impact on the market because the claims reimbursed by the pools as a percentage of the premium paid by the insureds in the market are greater than both of the prospective pools.** Also, as previously stated, the reimbursement of the diagnosis based retrospective and the modified NAIC pools is virtually the same but the retrospective pool does not charge premium and does not require the carrier to make the ceding decision through traditional underwriting procedures. These two factors, although not quantifiable from the information analyzed, should also contribute to the pools impact on the market when comparing retrospective to prospective reinsurance. While it is questionable that the reduction in claim costs to the market would actually reduce the premiums paid by those insured in the market, **it would seem logical that the reduction in claims cost along with the increased predictability of risk would allow for greater stability in the premiums charged to the groups in the market. With greater rate stability in the market, employers that may otherwise have dropped their current coverage would be prompted to maintain it.**

Impact on the insurers in the market

A very important consideration in the design and implementation is that the effectiveness of a reinsurance pool on the small employer market is directly related to the methodology used to spread the net losses of the pool. The following table, Table IV displays the effect of the spreading of the net losses of the retrospective reinsurance pool.

Table IV – Fully Retrospective Assessment Distribution – Three Year Average

Small Employer Carrier	Claims Paid	Share of Market Losses prior to Assessment	Share of Market Losses Subsequent to Assessment	Net Reduction in Carrier's Total Small Employer Market Claims	% Decrease in Small Employer Market Claims
102	$4,569,763	1.42%	1.10%	($1,023,582)	22.40%
103	$6,291,088	1.95%	1.66%	($921,145)	14.64%
104	$185,907	0.06%	0.05%	($17,185)	9.24%
105	$236,935,829	73.38%	57.11%	($52,522,842)	22.17%
106	$1,480,463	0.46%	0.32%	($450,996)	30.46%
107	$2,189,340	0.68%	0.54%	($440,694)	20.13%
108	$502,444	0.16%	0.13%	($95,867)	19.08%
109	$15,649,868	4.85%	3.86%	($3,183,459)	20.34%
110	$986,094	0.31%	0.22%	($285,382)	28.94%
111	$885,596	0.27%	0.23%	($147,090)	16.61%
112	$9,347,385	2.89%	2.67%	($734,392)	7.86%
113	$2,553,464	0.79%	0.62%	($566,359)	22.18%
114	$22,963,940	7.11%	5.75%	($4,381,191)	19.08%
116	$8,365,956	2.59%	2.08%	($1,644,711)	19.66%
117	$2,393,793	0.74%	0.58%	($511,565)	21.37%
118	$7,609,844	2.36%	1.73%	($2,007,843)	26.38%
	$322,910,774	100.00%	78.65%		

According to the MEPS data, the fully insured small employer market makes up approximately 35.7% of the entire fully insured group market in the state of Kansas. **The logic of assessment based on total health insurance premium is consistent with the assessment methodology generally accepted amongst most of the individual market High Risk Pools nationally, and in Kansas Health Insurance Association in particular.** Prior to the assessment of the losses on the entire fully insured group market in the state, the carriers in the small employer market would have been responsible for 100% of the claims, whereas after the assessment they would be responsible, cumulatively, for 78.65% of the losses which means all of the other carriers in the fully insured group market would be billed for 21.35% of the losses. (The 78.65% was arrived at by taking the losses of the market prior to the assessment, deducting the reimbursed losses and adding the assessed losses which remain in the small employer market, and then dividing the sum by the total claims of the small employer market.) Those are costs that would be removed from the small employer market. **As the table reports, all of the carriers in the small employer market experience a reduction in their total claims. While some of the decreases are not as drastic as others, there is still a reduction. The reason some of the carriers experience a greater reduction in their gross claims is because they had a greater share of the high risk claims, which means some of**

those disproportionate losses are equitably spread amongst the carriers in the small employer market, and the rest go outside the market.

Summary of the Cost/Benefit Implications of the Four Mechanisms and the Project Objectives.

The following chart summarizes the highlights of the reinsurance mechanisms in relative terms as they relate to the original project objectives and as they are currently designed. It is important to recognize that the specific design for Kansas can be modified for any particular reinsurance mechanism and the design still needs to be put into the context of the overall public policy considerations and recommendations, however, up to this point in the process, the reinsurance structure that best fits the needs of Kansas and its small employer insurance market as we understand it today will follow this summary.

Objectives of the Modeling Project	**Prospective NAIC Model**	**Prospective Modified NAIC**	**Full Retrospective**	**Diagnosis Based Retrospective**
Control Claim Fluctuations				
First $5,000	No	Yes	No	No
$5,000- $75,000	Yes	Yes	Yes	Yes
Above $ 75,000	Yes	Yes	No	No
Reinsurance Benefits	90% from $5,000 to $75,000 and 100% thereafter	100% of paid benefits	90% from $5,000 to $75,000 and nothing thereafter	90% from $5,000 to $75,000 and nothing thereafter
Improve Pricing Stability				
Limits on amount of funding to reimburse insurer claims	5% limit on small employer market.	Excess of 5% limit applied to total health insurance market	Limited funding from state appropriation if no assessment outside the small employer market	Limited funding from state appropriation if no assessment outside the small employer market
Claims reimbursed as % of small employer premium	7.4%	4.7%	1.2%	2.1%
Claims reimbursed as percent of small employer claims	33.2%	21.3%	12.6%	23.5%
Improve Insurer Risk Acceptance				
Pool Protects	All risks	All risks	All risks	Only risks with selected diagnoses
Unlimited	Yes	Yes	No	No

protection for catastrophic claims				

Recommended Reinsurance Structure

In comparing the four types of reinsurance pools modeled in this process, **we would recommend that a fully retrospective reinsurance pool be implemented because it removes the greatest amount of cost from the small employer market, and most of the moderate risk. The attachment point should be $5,000 with 90% reimbursement of paid claims up to an annual maximum of $75,000. We would also recommend that there be some level of state subsidization of the claims of the pool, to further reduce the volatility of the small employer market which would foster some additional stability within the market for both the insurers and the groups that they insure.** While any cost reduction may be minimal to the small employer groups in the market, the stability in pricing would allow for more of the employer groups to maintain the coverage that they now provide to their employees.

Another recommendation for the structure of a reinsurance mechanism would be the combination of both retrospective and quasi prospective reinsurance into one pool, with 100% reimbursement of paid claims between $75,000 and $1,000,000 if the risk is ceded at least 30 days prior to the renewal date of the insurance plan. This type of pool would offer the same corridor of coverage as the fully retrospective pool that was modeled. After the $75,000 claim ceiling is reached, the insurer could then evaluate whether it would like to continue the reinsurance on any risk that they felt would generate additional claims that would be significant. Upon choosing to reinsure the risk beyond the $75,000 ceiling the insurer would agree to pay reinsurance premium to the pool but would have the assurance that all claims in excess of the $75,000 threshold would be reimbursed and partially subsidized. Another positive aspect of a hybrid pool such as this would be the reduction in administrative burden on the carriers of evaluating the insured risks for cession into the prospective pool. By the time the risk reaches claims in excess of $75,000 the insurer would be able to make a much better informed decision regarding whether or not to continue the reinsurance for that risk and this should improve the accuracy of prospective ceding and expected claims would increase. **The most important feature that should assist the carriers in reducing prices is the substantial reduction or elimination of the need to reserve for unexpected catastrophic claims. The reserves could possibly be eliminated if these excess costs were completely subsidized by federal or state funds. Adjustment of the reinsurance premium rates can also be used to assure an equitable spread of risk if assessment is used in lieu of the state or federal subsidy.**

GLOSSARY

Adverse Selection: The concentration of undesirable risk and high claim cost (high risk) persons or groups.

Attachment Point: The dollar amount of insurer paid claims at which the reinsurance arrangement begins reimbursing the insurer for its paid claims.

Base Rates: Insurance rates that are determined in accordance with the rules and regulations of the state department of insurance or other agency that regulates insurance rates. The base rate can then be factored upward or downward by the allowable rating factors established in the state law.

Catastrophic Claims: Insurance claims that are considered to be unexpected and large relative to the expected level of claims an insurer must pay.

Ceding: Placement of risks into a reinsurance pool so that they become eligible for reinsurance coverage. This action is transparent to the risks being ceded since it is a behind the scenes transaction between the insurer and the reinsurer.

Ceding Insurer: The insurer is reimbursed for its ceded risks or has the ability to cede risks.

Claimant: The person who incurs the claim.

Claim Morbidity: The severity of claims.

Deductible: The amount of paid medical expense that the risk must pay out of pocket before insurance or reinsurance coverage is available.

Dependents: All family members of an employee.

Diagnosis Codes: Federally defined codes that describe claims by a particular medical classification.

Eligibility: The criteria used to identify risks that must be offered health insurance.

Existing Business: Insurance that has been previously written by that particular insurer in a prior year.
Claims

Guarantee Issue: Insurers are required to offer health state mandated health insurance.

Insurer: A licensed in a state's insurance market that is authorized to issue insurance.

Large Group Market: Employer groups that contain more than 50 eligible employees.

Mandatory Pool: Reinsurance where the insurer membership for the purposes of participation and assessment is required by virtue of its insurance license in a state and the membership provisions in the state law.

Fully Insured: Employer purchased insurance coverage that is covers all eligible risks for all eligible claims in accordance with the provisions of the insurance policy.

Pool(s): Mechanisms created by state law for the individual or the small employer markets where the costs of risks are spread and shared amongst the insurers that are members of the pool. Private pools also exist but they are not included as the term is used in this report.

New Business: Insurance that has been written for the first time by that particular insurer in the current year.

Prospective Reinsurance: A reimbursement arrangement where only pre-selected risks are eligible before claims are paid.

Partially Self Funded: A combination of self insured plan and an insured plan. Usually, the insured portion begins where the self insured portion ends.

Reimbursement: Payment of actual claim costs incurred by an insurer.

Reinsurance: Reimbursement to an insurer for its paid claims on eligible risks in accordance with the provisions of the state law or the plan of operations created by the board of the reinsurance mechanism.

Renewal: The point at which an insurance policy can be continued for another term of coverage, usually one year.

Reserves: The dollar amount of future claims that are not known at the time and are in addition to the dollar amount of estimated claims that have been incurred but not reported.

Retention: The dollar amount or the percentage of paid claims that the insurer is obligated to absorb. In other words, the amount of the insurer's paid claims that are not covered and reimbursed by the reinsurance arrangement.

Retro Diagnosis: Retrospective reinsurance using pre-selected diagnosis codes as the identifier of for eligible risks.

Retrospective Reinsurance: A reinsurance arrangement where there is no pre-selection of risks and all risks as defined by the state law or the plan of operations are eligible and coverage begins after claims are paid.

Scrubbing: The process in modeling where raw data is organized and put into a form to accommodate modeling.

Self Insured: Employer coverage that is not purchased from a licensed insurer where all claims are paid and are absorbed by the employer.

Small Employer: Firms that defined in state law based on the number of employees eligible for health insurance. Federal HIPAA Law requires 2 to 50 but states can be more liberal.