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## **Status Report of the Health Liquidity Work Group To the NAIC Health Entities Working Group June 2003**

This report was prepared by the American Academy of Actuaries Health Liquidity Work Group.

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The Academy's Health Liquidity Work Group has identified a set of potential ratios to be used to test for health organization liquidity, as previously reported. The ratios would be used in a "safe harbor" test. The Health Liquidity Work Group has received some actual data from the NAIC to determine which ratios are good predictors of an entity's liquidity strength and develop a weighting scheme for a first level liquidity test. The data did not allow for the testing of all of the ratios. Following is the description of the test that could be performed. The work group plans to use statutory data from a database being leased by an outside consulting firm to perform tests on the remaining ratios before the September meeting.

The AAA Liquidity Workgroup has identified ten ratios to potentially use as part of a liquidity test. Most of these ratios are variations of FAST ratios and include:

- ✧ Investment Yield (1)
- ✧ Combined Ratio (6)
- ✧ Profit Margin Ratio (7)
- ✧ Liquid assets at market to Short-term Liabilities (18)
- ✧ Change on Capital and Surplus (16)
- ✧ Liquid assets at market Less Current Liabilities to Months of Net Loss
- ✧ Premium Receivable to Premium Revenue (20)
- ✧ Average Number of Days of Unpaid Claims (13)
- ✧ Change in Claims Payable Per Member Per Month (34)
- ✧ Change in Membership (26)

### ***Investment Yield***

This ratio is similar to the FAST ratio #1. The ratio compares investment income to cash and invested assets.

We have the data to test this ratio and are considering a number of alternative tests at this time.

### ***Combined Ratio***

This ratio is similar to FAST ratio # 6. Premium revenue is compared to claim and administrative expense, excluding investment, interest, and taxes.

The recommended ratio differs from the FAST ratio in that it includes ASO/ASC revenue, administrative expenses, and claims. Some companies with large ASO blocks could have losses in ASO fees that would cause future liquidity problems.

A ratio approaching 1 could trigger concern. Any large increases or variability would also trigger concern.

Testing will be done to determine if a ratio of 1 is the correct trigger point and what level of increase or variability is predictive of future problems.

The combined ratio may correlate so closely with the profit margin ratio that only one would need to be tested.

### **Description of Test**

Data was available for 694 insurance Companies for the years 1999, 2000, and 2001. 356 companies had data for all three years. These were the companies that we assessed.

Combined ratio is calculated as follows:

$$\text{(Incurred Claims + Expenses) / Premiums}$$

We considered how a combined ratio might indicate potential liquidity problems. There were two combined ratio scenarios and three combined ratio tests that might give this indication.

First, a combined ratio greater than 100% over a period of time indicates that a company's operations is not producing enough revenue to cover its claims and expense. Thus investment income is being counted on to augment premiums in meeting claim payments and admin expenses. Should the investments not be producing sufficient income or liquid enough to meet this demand, then a liquidity issue may be present.

Thus our first combined ratio test was to identify companies that had combined ratios in excess of 105% for all three years.

A combined ratio that increases significantly from one year to the next may indicate an increased

liquidity concern. This might occur if the increase in the combined ratio indicates that claims experience have deteriorated unexpectedly and therefore the cash needed to pay the unexpected increase in claims may not be available.

For this concern we established two tests:

1. Companies that had a 5% increase in combined ratio in each year were identified as potential liquidity concerns; and
2. Companies that had a 10% increase in combined ratio in any year were also identified as potential liquidity concerns.

### Test Results

There were 356 companies that had 3 years of combined ratio data. Of these, 90 companies failed at least one of the three tests:

- 52 companies failed the 105% over 3 years test;
- 53 companies failed the 10% increase in any year test; and
- 12 companies failed the 5% increase in each year test.

Company count details are as follows.

Result	Under \$20 Million	\$20 to \$100 Million	\$100 to \$500 Million	\$500 Million to \$1 Billion	Over \$1 Billion	Total
Total	65	96	144	29	22	356
Failed	38	32	15	2	3	90
Failed %	58%	33%	10%	7%	14%	25%

### ***Profit Margin Ratio***

For the recommended ratio interest income would not be included in profit, but interest expense is included as a reduction to profit. Since interest expense was not available, this ratio could not be tested.

### ***Liquid assets at market to Short-term Liabilities***

The ratio is not quite a current ratio in that it compares liquid assets to short-term liabilities. Data was not available to test this ratio.

### ***Change in Capital and Surplus***

This is similar to FAST ratio # 16. It compares the change in capital and surplus to the prior year-end capital and surplus.

Description of Test: Capital and surplus (C&S) amounts at the end (CY) and beginning (PY) of year 2001 were provided for 773 health insurance entities. Failing entities were selected based on three criteria:

1. Those that had negative C&S at year-end 2001 (CY);

2. Those for which C&S reduced by over 10% during 2001; and
3. Those for which C&S reduced by over \$5 million during 2001.

Test Results: Five entities (.6 % of total companies) had negative C&S at year end 2001, 122 entities (16%) lost more than 10% of their C&S during 2001, and 39 entities (5%) lost more than \$5 million during the year.

Of course, both the tests and the thresholds chosen are somewhat arbitrary, but may be a reasonable place to start.

Data problems: 38 of the entities (5%) reported zero C&S at the beginning and the end of 2001. Two additional entities reported the exact same dollar amount of C&S at the beginning and end of the year. Two of the entities that reported negative surplus at year-end also had negative surplus at the beginning of the year. It seems likely that all of these observations involve data errors.

### ***Liquid assets at market Less Current Liabilities to Months of Net Loss***

This ratio measures the number of months of loss that can continue until current liabilities exceed liquid assets. Data were not available to test this ratio.

### ***Premium Receivable to Premium Revenue***

This ratio is similar to FAST ratio # 20 and would compare premium receivable to premium revenue. This ratio would include both “admitted” and “non-admitted” premiums receivable.

There was a very limited amount of data for this test. In reviewing the premium test, we assumed that liquidity could become a concern if premium payments were not received while claim payments were still being made. Thus, a consistent level for the first ratio would not indicate a problem, but a high value and a significant increase from that high value to an even higher value could indicate a potential liquidity concern. We looked at changes of 3% through 6% with an initial high value of three times the change (i.e., 9% through 18%). While the number of companies decreased with increasing values, there were no companies that started high and still had a significant upward change in the ratio. As such, we see no value to this ratio based on this set of data.

### ***Average Number of Days of Unpaid Claims Ratio***

This ratio is similar to FAST ratio #13 and compares the unpaid claim liability to average amount of paid claims per day.

The recommended formula includes ASO and ASC claims. It is believed that once a company encounters liquidity problems it may slow down claim payments and an early indicator would be an increase in the number of days of unpaid claims.

The absolute number of days and increases in number of days as a percentage could both trigger concern. The work group recommends using change as a percent of number of days to trigger concern.

There was a very limited amount of data for this test. In reviewing the claims test, we looked at values of months unpaid of one month (values > .83), two months (values > 1.67) as well as high values of 2.0, 2.5

and 3.33. There were insufficient data for any time series review and the numbers declined in a reasonable fashion. Given the limited data, we see no value to the direct use of this ratio. However, an increase in the value when coupled with a decrease in the current ratio could be indicative of company action delaying claims payments because of liquidity issues. We do a check for this combined occurrence.

***Change in Claims Payable Per Member Per Month***

This ratio is similar to FAST ratio # 34 and compares claims PMPM in the current year to last year. We did not have membership data to test this ratio.

***Change in Membership***

This ratio is similar to FAST ratio # 26 and compares the change in membership since last year-end to last year-end's membership. We did not have membership data to test this ratio.