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Actuarial Committee

Meeting Minutes

Date	Time	Location	Staff Contact
August 1, 2018	9:30 AM	WCIRB California 1221 Broadway, Suite 900 Oakland, CA	David M. Bellusci

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Released: August 10, 2018

Members	Representing
Laura Carstensen	Zurich North America
Jim Gebhard*	Farmers Insurance Group of Companies
Jill Petker	Liberty Mutual Group
Mark Priven	Public Members of Governing Committee
Kate Smith	State Compensation Insurance Fund
Bryan Ware	AmTrust
Chris Westermeyer	Travelers
Doug Zearfoss	Employers Insurance Group

California Department of Insurance
Ron Dahlquist
Robert Hallstrom

WCIRB
Bill Mudge
David Bellusci
Ward Brooks
Tony Milano
Chris M. Wong

* Participated via teleconference

The meeting of the Actuarial Committee was called to order at 9:30 AM following a reminder of applicable antitrust restrictions, with Mr. David Bellusci, Executive Vice President and Chief Actuary, presiding.

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Approval of Minutes
The Minutes of the meeting held on June 15, 2018, were distributed to the Committee members in advance of the meeting for review. As there were no corrections to the Minutes, a motion was made, seconded and unanimously approved to adopt the Minutes as written.

Item AC14-08-06
Reform Adjustments to Loss Development

The Committee was reminded that the loss development methodology included in the last several pure premium rate filings has reflected adjustments for the impact of Senate Bill No. 863 (SB 863) and that the Committee has recommended that these adjustments continue to be reviewed regularly. Staff presented a summary of its most recent analysis of the continued appropriateness of these adjustments, which was included in the Agenda materials.

The Committee reviewed the adjustments to paid indemnity development for the changes to permanent disability (PD) benefits from SB 863. It was noted that the age-to-age factors for accident years 2013 and 2014 imputed based on the SB 863-adjusted payment patterns were initially more accurate than those based on the unadjusted latest year factor. However, it was also noted that the age-to-age development over the last two calendar years imputed from the adjusted payment pattern was less accurate than the unadjusted latest year factor. Staff noted that this difference is in part attributable to recent increases in the rate at which PD claims are settling, with the increases in average PD benefits being offset by fewer PD claims open at later maturities. The Committee also noted that recent indemnity development has been declining and these adjustments have historically had an upward impact on the indemnity loss development projection. After discussion, the consensus of the Committee was that the SB 863 adjustments to paid indemnity loss development were no longer appropriate based on the reasons discussed at the meeting.

The Committee then reviewed the adjustments to paid medical loss development for the SB 863 provisions effective January 1, 2013 related to liens, spinal surgeries, and ambulatory surgical centers as well as the first two years of the four-year phase-in of the physician fee schedule to a Resource-Based Relative Value Scale. Staff noted that in total these adjustments modestly increased the medical loss development projection. It was also noted that based on the most recent calendar year, the adjusted age-to-age factors have not been significantly more accurate than the unadjusted latest year factor. The Committee noted that recent paid medical loss development has been steadily declining in contrast to the SB 863 adjustments which generally increase the medical loss development projections. The Committee also noted that SB 863 provisions related to liens, spinal surgeries, independent medical review and independent bill review in addition to the significant decreases in pharmaceutical payments (see Minutes for Item AC18-06-01) are likely having a significant impact on the medical loss development tail, and no longer including the adjustments to medical age-to-age development for SB 863 better responds to the recent declines in paid medical loss development. After discussion, the consensus of the Committee was that the SB 863 adjustments to paid medical loss development were no longer appropriate for the reasons discussed at the meeting. Staff noted that the adjustments for SB 863, if no longer reflected in the medical loss development methodology, would then be reflected in the medical on-level factors.

Item AC17-12-04
Earthquake Study

The Committee was reminded that at the December 6, 2017 meeting, Risk Management Solutions (RMS) presented their study of California workers' compensation earthquake exposure. In the study, RMS projected that the long-term average earthquake expected loss per year was $29 million, with an average loss rate per $100 of payroll of $0.005. At the December 6, 2017 meeting, the Committee recommended consideration of a provision to reflect average expected losses from the earthquake hazard in advisory pure premium rates at the time of the next annual pure premium rate filing.

The Committee was advised that the WCIRB had included a provision for earthquake exposure in proposed January 1, 2004 pure premium rates and that the California Department of Insurance (CDI) had rejected that provision due to concerns over (a) the magnitude of the model estimates due to the limited volume of historical workers' compensation losses in California and (b) the lack of a long-term funding mechanism for earthquake losses. The Committee was further advised that since 2004 refinements to the earthquake models have significantly moderated the loss estimates, the WCIRB has developed a refined model of statewide insured exposures by location and that most jurisdictions include some catastrophe load in loss costs.

The Committee agreed that the information in the RMS study quantifying the earthquake exposure was valuable and encouraged the WCIRB staff to continue to work on developing and publishing information on refinements of estimates by region or industry. However, Committee members expressed concern with including a multiplicative provision in pure premium rates inasmuch as the earthquake exposure does not vary proportionately with classification advisory pure premium rates and different treatments of catastrophe loadings in other jurisdictions could create administrative issues in California for insurers. The consensus of the Committee was that it was premature to propose the inclusion of an earthquake provision in advisory pure premium rates at this time, but the issue could be revisited in the future in conjunction with any indication of statewide terrorism expected loss costs based on the results of the ongoing RMS terrorism study.

Item AC18-06-01
3/31/2018 Experience – Review of Methodologies

The Agenda materials included an updated analysis of March 31, 2018 experience, which was first reviewed by the Committee at the June 15, 2018 meeting. The Committee was advised that the modest increase in the projected loss ratio included in the Agenda materials from that reviewed at the June 15, 2018 meeting was attributable to updated frequency forecasts based on updated claim count and economic information.

The Committee reviewed loss development and noted that the paid and incurred loss development patterns reflected in the Agenda materials were consistent with those reviewed at the June 15, 2018 meeting. The Committee also noted that indemnity claim settlement rates continue to accelerate. Staff noted that it reviewed the adjustment to paid loss development for changes in claim settlement rates to potentially be more responsive to the acceleration in incremental claim settlement rates. However, it was noted that the alternative approaches reviewed did not significantly improve the accuracy of the projection.

Staff advised the Committee that it had reviewed WCIRB medical transaction data through the first quarter of 2018 and noted that payments for medical-legal and liens have declined recently while pharmaceutical payments have continued to decline sharply. Staff noted that the sharp declines in pharmaceutical payments over the last several years has affected claims disproportionately by maturity level. For example, it was observed that in 2013 over one-third of payments for medical services made on claims older than 10 years were for pharmaceuticals, while only approximately 15% of such payments were for pharmaceuticals in 2017. The Committee noted that this shift likely has had a significant impact on projected paid and incurred medical development and recommended staff further analyze this issue and its impact on loss development. Staff noted that physician service payments also vary by maturity and recent shifts in physician costs differed based on the types of services that received benefit increases or decreases from the change to the Resource-Based Relative Value Scale. However, staff noted that the increases and decreases at each maturity approximately tended to offset each other and this change is likely not significantly distorting paid medical loss development patterns.

The Committee reviewed the loss development projections, including the alternative loss development projections included in the Agenda materials (Item AC18-08-03). It was noted that the projections based on unadjusted incurred development continue to be significantly lower than the corresponding projections based on paid development but the adjusted paid and adjusted incurred loss development projections, after reflecting the methodology refinements recommended by staff (see the Minutes for Items AC14-08-06 and AC18-08-04), were much closer to each other. It was noted that incurred loss development has typically been more volatile and cyclical than paid loss development, particularly for large deductible policies, and, as a result, staff recommended continuing to base the loss development projection primarily on paid development. It was also noted that claim settlement rates continue to increase and the adjustment for changes in claim settlement rates improved the accuracy of the projection in prior periods of significant settlement rate change. Finally, it was noted that, while staff believed the adjustments for the lien reforms of Senate Bill No. 1160 (SB 1160) and Assembly Bill No. 1244 (AB 1244) applied to paid medical development continue to be appropriate, eliminating the adjustments for Senate Bill No. 863 (SB 863) addresses concerns with the continued applicability of these adjustments and is responsive to the recent declines in the projected loss ratios (see the Minutes for Item AC14-08-06).

After discussion, a motion was made and seconded to recommend basing the projected policy year 2019 indemnity loss ratio on the loss development methodology based on latest year paid adjusted for changes in claim settlement rates. The motion passed unanimously. A second motion was made and seconded to recommend basing the projected policy year 2019 medical loss ratio on the loss development methodology based on latest year paid adjusted for SB 1160 and AB 1244 and changes in claim settlement rates. The motion passed with seven in favor and one abstention.

The Committee next discussed the frequency projections reflected in the Agenda materials. It was noted that the modest declines projected by the frequency model forecasts were comparable to recent changes in indemnity claim frequency.

The Committee discussed the indemnity severity trend projection and noted that on-level indemnity severities have decreased in each of the last eight years. It was noted that the significant declines observed for 2013 and 2014 are likely related to the on-level factors for Senate Bill No. 863 (SB 863) applied to indemnity losses. The Committee was advised that these on-level factors will be reviewed later this year as part of the WCIRB's reform cost monitoring process. It was also noted that changes in minimum wage laws likely impact changes in indemnity benefits but their effect was unclear as it could have both an upward and downward impact on indemnity benefit levels. After discussion, the consensus of the Committee was that a -0.5% on-level indemnity severity trend was responsive to the most recent decreases while still giving some consideration to the longer-term historical rates of modest growth and potential impact of future minimum wage increases.

Staff noted that it had reviewed the impact of SB 863 on the utilization of medical services in response to comments raised in the California Department of Insurance's Decision on the July 1, 2018 Pure Premium Rate Filing. Staff noted that the total 10% decline in the utilization of medical services from 2011 to 2014 attributable to SB 863 reflected in recent pure premium rate filings and in the Agenda materials had been based on information through the second quarter of 2016 and was updated to 15% based on the most recent information. Staff also noted that the 2% decline in medical severity observed for 2015 is also likely related to the recent reforms. Staff recommended distributing the total 17% decrease from 2011 to 2015 in medical severities by accident year based on the same approach used in recent pure premium rate filings. Specifically staff recommended that on-level adjustments of -3%, -4%, -5%, -3%, and -2% be applied to accident years 2011, 2012, 2013, 2014, and 2015, respectively. The consensus of the Committee was that these SB 863 on-level adjustments were appropriate.

The Committee next discussed the medical severity trend projection. It was noted that the estimated 2017 on-level medical severity change based on March 31, 2018 experience of approximately 3% was significantly lower than that based on December 31, 2017 experience. It was also noted that, other than for 2017, on-level medical severities have not grown by more than 2% in each of the prior seven years. The Committee noted that medical severity growth has historically been significant following periods of reform, and the majority of medical payments on 2019 policies will be paid in 2023 and later. The Committee also noted that annual medical severity growth in other systems has been modest over the last several years. After discussion, the consensus of the Committee was that a 2.5% on-level medical severity trend balanced the recent modest medical severity trends with the potential for significant growth in later calendar years and average medical severity growth in other systems.

The Committee reviewed the alternative trend projections included in the Agenda materials (Item AC18-08-03). It was noted that the projections based on short-term or long-term combined loss ratio trends were generally consistent with those based on separate frequency and severity projections for the comparable period. After discussion, the consensus of the Committee was that the trending methodology based on the separate frequency and severity projections allows for separate analysis and projections of these components and continues to be appropriate. A motion was made and seconded to recommend basing the projected policy year 2019 loss ratio on the trending methodology reflected in the Agenda materials, but with a -0.5% indemnity severity projection and a +2.5% medical severity projection. The motion passed with seven in favor and one opposed. The actuary representing the Public Members of the Governing Committee who opposed this motion indicated that he believed a combined loss ratio trend based on recent changes in on-level loss ratios applied to the latest two years was more appropriate in that a combined loss ratio approach is not affected by the interrelationships of frequency and severity.

Item AC18-08-01
Third Quarter 2018 Review of Diagnostics

The Agenda materials included the WCIRB's standard set of diagnostics that are reviewed by the Actuarial Committee and the Claims Working Group (CWG) on a semi-annual basis. Among the diagnostics discussed by the Committee were the following:

1. Indemnity claim frequency per 1,000 workers has remained flat since accident year 2010 which is counter to California's long-term pattern and other states' steady declines. A Committee member asked if this difference could be related to the increase in the number of cumulative trauma claims. It was noted that the preliminary results of the WCIRB's ongoing study of cumulative trauma claims indicate that growth in cumulative trauma claims account for a portion of the recent flat frequency but does not explain the entire trend.

2. Indemnity claims continue to close at faster rates. In particular, permanent disability claim closures have accelerated in recent periods. The Committee was advised that a Claims Working Group member suggested that, at least on an anecdotal basis, some judges have recently increased scrutiny of early settlements during settlement conferences which could, if this practice becomes widespread, reduce the acceleration of claim closures.

3. The median and mean duration of temporary disability on permanent disability claims peaked during 2008 and has continually decreased since that time. The Committee noted that the peak corresponds with the height of the Great Recession. It was also noted that the Claims Working Group advised that the subsequent economic recovery may have encouraged claimants to return to work more quickly and reduced temporary disability duration.

4. The number of eligible independent medical reviews (IMR) increased significantly during the first half of 2018 compared to 2017. The Committee was advised that the Claims Working Group suggested that this increase may be attributed to improved efficiency from certain applicant attorney firms in streamlining the IMR submission process. The Committee was also informed that the impending California Supreme Court ruling in *King v. CompPartners* may have a significant impact on IMR, utilization review, and medical costs if the Court finds that a utilization review organization can be subject to tort liability.

5. Pharmaceutical payments decreased dramatically from service year 2013 to 2017. The Committee was advised that the Claims Working Group suggested that the decrease is largely driven by greater awareness of opioid abuse, IMR, anti-fraud efforts and medical fee schedule changes.

6. Medical case outstanding per open indemnity claim continued to increase through 39 months and decreased thereafter. A Committee member noted that this pattern may be attributed to closing larger claims faster.

Item AC18-08-02
1/1/2019 Filing – Loss Adjustment Expense Experience Review

The Agenda materials included an analysis of the projected policy year 2019 ratio of loss adjustment expense (LAE) to loss based on calendar year unallocated loss adjustment expense (ULAE) experience through calendar year 2017 and accident year allocated loss adjustment expense (ALAE) and medical cost containment program (MCCP) experience as of March 31, 2018.

The Committee was reminded of the 2015 changes to the WCIRB's Expense Call to collect countrywide information related to ULAE on large deductible policies and claims handled by third party administrators. It was noted that countrywide ULAE amounts for calendar years 2015 through 2017 were adjusted based on this information using the same process as reflected in the last several pure premium rate filings and that calendar years 2013 and 2014 ULAE amounts were partially adjusted for this information based on information provided by several large national insurers.

The Committee was reminded that at the December 6, 2017 meeting, the Committee adopted changes to the WCIRB's 2017 Expense Call to collect countrywide open indemnity claim count information in order to more appropriately apportion countrywide ULAE amounts to California, compared to the prior approach of using paid losses. Staff noted that open indemnity claim count information to apportion calendar year 2016 ULAE to California was also collected from the insurers for which this adjustment was appropriate. Staff noted that, as a result, ULAE amounts included in the Agenda materials for calendar years 2016 and 2017 were essentially fully adjusted for both the 2015 and 2017 Expense Call changes. The Committee noted that the paid ULAE to paid loss ratios for the national insurers after fully reflecting these adjustments are now much more consistent with those for other private insurers. The Committee noted that remaining differences in the paid ULAE ratios between these groups of insurers is likely due to differences among insurer practices as well as economies of scale.

The Committee was reminded that the ULAE projection included in the Agenda materials was based on the average of (a) a projection based on the relationship of paid ULAE to open indemnity claims and (b) a projection based on the relationship of paid ULAE to paid losses. Staff noted that, as in the last several pure premium rate filings, average ULAE amounts were based on private insurers while all other information was on a statewide basis. Staff noted that the ULAE projections included in the Agenda materials were based on the average of the latest two calendar years (both of which reflect the method of apportioning countrywide ULAE to California based on open indemnity claim counts). Staff also noted that given that only 2016 and 2017 ULAE fully reflects the recent Expense Call changes, the projected average ULAE per open indemnity claim trend was based on the average wage trends from the UCLA Anderson School of Business and California Department of Finance forecasts, consistent with the July 1, 2018 Pure Premium Rate Filing.

The Committee next discussed the projections of ALAE (excluding MCCP). The Committee was reminded that the ALAE (excluding MCCP) and MCCP amounts included in the Agenda materials were adjusted for the changes in the reporting of independent medical review (IMR) and independent bill review (IBR) fees effective January 1, 2016 for consistency, in that the estimated IMR and IBR fees paid prior to January 1, 2016 were included in the ALAE (excluding MCCP) amounts and excluded from the MCCP amounts, using the same approach as reflected in the last several pure premium rate filings.

It was noted that paid ALAE development declined in the first quarter of 2018 and average ALAE amounts moderated from those reflected in the July 1, 2018 Pure Premium Rate Filing based on December 31, 2017 experience. The Committee was reminded that the ALAE projection included in the Agenda materials was based on the relationship between projected ultimate ALAE for private insurers and statewide ultimate indemnity claim counts. The Committee was reminded that the projected ALAE severity trend reflected in the Agenda materials of 3.5% was based on the average of the longer-term and shorter-term average rates of growth in (a) calendar year ALAE per open indemnity claim and (b) accident year ultimate ALAE per indemnity claim for private insurers (the methodology reflected in the last several pure premium rate filings) and was slightly lower than the ALAE severity trend reflected in the July 1, 2018 Pure Premium Rate Filing of 4.0%.

Staff noted that the projected ALAE to loss ratio included in the Agenda materials was also adjusted to reflect the anticipated savings to lien costs from Senate Bill No. 1160 (SB 1160) and Assembly Bill No. 1244 (AB 1244). Staff noted that the adjustment was based on the same factor included in the July 1, 2018 Pure Premium Rate Filing given that the impact of SB 1160 and AB 1244 is likely not yet significantly reflected in recent accident year ALAE costs since lien costs are typically paid much later. It was recommended that this adjustment be reviewed prior to the next pure premium rate filing as additional information on lien costs and ALAE emerges.

The Committee reviewed the projection of MCCP costs. It was noted that paid MCCP development and average MCCP per indemnity claim continues to decrease, which is likely related to recent declines in paid medical loss development and the recent increases in indemnity claim settlement rates. The Committee was reminded that the MCCP projection included in the Agenda materials was based on a similar method to that used to project ALAE excluding MCCP costs and is based on statewide data. It was noted that the projected MCCP severity trend based on the average rates of growth in calendar year MCCP per open indemnity claim and accident year ultimate MCCP per indemnity claim (after reflecting the adjustment for IMR and IBR costs) was approximately -1%, which differed from the MCCP severity trend reflected in the July 1, 2018 Pure Premium Rate Filing of 0%. The Committee noted that the negative projected MCCP severity trend was reflective of the fact that claim settlement rates continue to accelerate and medical costs continue to moderate.

After discussion, a motion was made and seconded to base the policy year 2019 LAE projection on the methodologies reflected in the Agenda materials. The motion passed unanimously.

Item AC18-08-03
1/1/2019 Filing – Review of Alternative Loss Projection Methodologies

The Agenda materials included a number of alternative loss development and trending methodologies that had been reflected in prior WCIRB pure premium rate filings or discussed at prior Actuarial Committee meetings. The Committee reviewed summaries of the alternative loss projection methodologies during the discussion of loss development and trending methodologies in the context of its review of March 31, 2018 experience. (Please refer to the August 1, 2018 Actuarial Minutes for Item AC18-06-01.)

Item AC18-08-04
Study of Case Reserve-Adjusted Loss Development Methodology

The Committee was reminded that at the December 6, 2017 meeting, the Committee recommended that staff review the assumptions and approach for adjusting incurred loss development for changes in case reserve levels, given that it has been several years since this methodology was reviewed in detail and recent average case reserve levels have been shifting. Staff presented a summary of the analysis that was included in the Agenda materials.

Staff noted that incremental changes in average case reserves per open claim should be reviewed in addition to reviewing annual changes by accident year, which should help identify periods of calendar year shifts in case reserve levels. Staff also recommended that paid losses per closed indemnity claim should be used for both indemnity and medical when selecting the inflation factors to apply.

The Committee reviewed the approach to selecting the inflation factors to apply in the adjustment. Staff summarized a number of alternative approaches reviewed which relied on assumptions that differ from the current approach of judgmentally selecting a single inflation factor for all periods based on on-level losses and average annual rates of growth. Staff noted concerns with applying judgment in the approach as well as with using on-level factors estimated based on the impact of reforms at ultimate, which may not be appropriate to apply to both case reserves and paid losses per closed claim at early maturities. Staff noted that an approach that selects an inflation factor for each accident year and age based on the reported changes in average paid per closed indemnity claim (a) does not require on-leveling, (b) does not require judgmentally selecting an average trend rate, and (c) produces adjusted incurred loss development factors that generally bridge the gap between paid and incurred development as well as or better than the current approach. A Committee member noted that this approach may be over-parameterizing the method. Staff acknowledged that this approach uses more factors than the prior approach but staff believed that the benefits of this adjustment outweigh its drawbacks and that a multi-year average of age-to-age factors may be used to smooth some of the volatility inherent in this approach.

The Committee next reviewed the number of periods to which the adjustment should be applied. Staff noted that shifts in average case reserve levels continue to occur at much later maturities and that the adjustment for case reserve shifts applied to incurred loss development through approximately 156 months addresses some of the differences between paid and incurred loss development during these periods. Staff noted that after 156 months there is increased volatility in average case reserves per open claim given that relatively few claims are open during these later periods. As a result, staff recommended applying this adjustment to incurred development through approximately 156 months in lieu of the approximately 84 months used in the current approach.

A Committee member noted that even with staff's recommended changes, the methodology continues to show some volatility and may not be appropriate to use as the basis for the pure premium rate projection. Staff noted that the recommended enhancements were intended to address concerns with the assumptions underlying the case-reserve adjusted method and do not address some of the longstanding concerns with relying on incurred development that have been discussed at prior Committee meetings. It was also noted that the selection of a loss development methodology should be based on a review of the current data and claims environment. After discussion, the consensus of the Committee was that staff's recommended enhancements to the case reserve-adjusted methodology should be applied when producing projections based on this alternative methodology for the Committee's consideration.

During the discussion, staff noted that there were some revisions to Exhibits 6.1, 6.2, and 7 from the Agenda materials. Staff noted that these revisions did not materially impact the overall findings. The revised exhibits are attached to these Minutes.

Projected Cumulative Indemnity Incurred Development Factors

Methodology:	Age	Calender Year 2017	2016	2015	2014	2013	2012	2011	2010	Std. Dev. 3-Yr	Std. Dev. 5-Yr	Difference from the Latest Year Unadjusted Paid[2] 2017	2016	2015	2014	2013	2012	2011	2010
Incurred Adj. for Case Reserves:																			
A. Single Trend - Latest Yr	12-84	3.104	3.365	3.530	3.866	3.700	3.788	3.457	2.985	0.215	0.295	-5.1%	-1.1%	6.7%	18.0%	7.9%	2.4%	1.8%	-3.9%
B. Single Trend - 3-Yr Avg	12-84	3.261	3.533	3.770	4.078	3.884	3.627	3.145	2.695	0.255	0.317	-0.3%	3.9%	14.0%	24.4%	13.3%	-2.0%	-7.4%	-13.2%
C. Filing Trend - Latest Yr	12-84	2.968	3.159	3.254	3.529	3.565	3.824	3.593	3.385	0.146	0.252	-9.3%	-7.1%	-1.6%	7.7%	4.0%	3.4%	5.8%	9.0%
D. Trend by Year / Age - Latest Yr	12-84	3.110	3.327	3.385	3.509	3.970	4.018	3.638	3.183	0.145	0.319	-4.9%	-2.2%	2.3%	7.0%	15.8%	8.6%	7.1%	2.5%
E. Trend by Year / Age - 3-Yr Avg	12-84	3.305	3.460	3.646	3.905	4.110	3.794	3.275	2.908	0.171	0.326	1.0%	1.7%	10.2%	19.1%	19.9%	2.5%	-3.5%	-6.4%
F. Trend by Age - Latest Yr	12-84	3.114	3.368	3.513	3.833	3.701	3.852	3.531	3.074	0.202	0.282	-4.8%	-1.0%	6.2%	16.9%	7.9%	4.1%	4.0%	-1.0%
G. Trend by Age - 3-Yr Avg	12-84	3.287	3.545	3.747	4.022	3.897	3.710	3.224	2.787	0.231	0.291	0.5%	4.2%	13.3%	22.7%	13.7%	0.3%	-5.1%	-10.3%
H. Latest Year Unadj. Incurred	12-84	3.063	3.165	3.118	3.229	3.355	3.497	3.432	3.374	0.051	0.112	-6.4%	-6.9%	-5.7%	-1.5%	-2.1%	-5.5%	1.1%	8.6%
I. Latest Year Unadj. Paid[1]	12-84	3.271	3.401	3.308	3.278	3.428	3.700	3.396	3.106	0.067	0.073	---	---	---	---	---	---	---	---
Incurred Adj. for Case Reserves:																			
A. Single Trend - Latest Yr	84-156	1.077	1.050	1.078	1.065	1.038	1.039	1.013	1.068	0.016	0.018	-2.4%	-4.5%	-0.5%	-0.4%	-3.7%	-0.1%	-0.1%	4.7%
B. Single Trend - 3-Yr Avg	84-156	1.082	1.075	1.077	1.063	1.043	1.030	1.015	1.069	0.003	0.016	-2.0%	-2.2%	-0.6%	-0.6%	-3.2%	-0.9%	0.1%	4.8%
C. Filing Trend - Latest Yr	84-156	1.065	1.032	1.054	1.038	1.026	1.042	1.022	1.094	0.017	0.016	-3.5%	-6.2%	-2.7%	-3.0%	-4.8%	0.2%	0.8%	7.2%
D. Trend by Year / Age - Latest Yr	84-156	1.076	1.071	1.089	1.067	1.042	1.044	1.016	1.037	0.009	0.017	-2.5%	-2.6%	0.5%	-0.3%	-3.3%	0.4%	0.3%	1.7%
E. Trend by Year / Age - 3-Yr Avg	84-156	1.084	1.095	1.087	1.060	1.034	1.023	1.009	1.040	0.006	0.025	-1.8%	-0.4%	0.3%	-0.9%	-4.1%	-1.6%	-0.5%	1.9%
F. Trend by Age - Latest Yr	84-156	1.088	1.053	1.070	1.042	1.006	1.015	0.999	1.068	0.017	0.031	-1.4%	-4.2%	-1.3%	-2.5%	-6.6%	-2.4%	-1.5%	4.7%
G. Trend by Age - 3-Yr Avg	84-156	1.097	1.084	1.075	1.042	1.011	1.002	0.995	1.063	0.011	0.035	-0.6%	-1.4%	-0.8%	-2.6%	-6.1%	-3.6%	-1.8%	4.2%
H. Latest Year Unadj. Incurred	84-156	1.054	1.058	1.058	1.067	1.074	1.079	1.070	1.044	0.002	0.008	-4.5%	-3.8%	-2.3%	-0.3%	-0.3%	3.8%	5.5%	2.3%
I. Latest Year Unadj. Paid[1]	84-156	1.104	1.100	1.084	1.069	1.078	1.040	1.014	1.020	0.011	0.015	---	---	---	---	---	---	---	---
Incurred Adj. for Case Reserves:																			
A. Single Trend - Latest Yr	156-288	1.001	1.016	1.032	1.049	1.035	1.031	---	---	0.016	---	-0.4%	1.5%	2.4%	3.1%	2.8%	2.3%	---	---
B. Single Trend - 3-Yr Avg	156-288	1.002	1.024	1.034	1.045	---	---	---	---	0.016	---	-0.3%	2.4%	2.6%	2.7%	---	---	---	---
C. Filing Trend - Latest Yr	156-288	0.993	1.006	1.019	1.035	1.029	1.033	---	---	0.013	---	-1.2%	0.5%	1.2%	1.8%	2.3%	2.5%	---	---
D. Trend by Year / Age - Latest Yr	156-288	1.005	1.001	1.022	1.043	1.034	---	---	---	0.012	---	0.0%	0.0%	1.5%	2.5%	2.7%	---	---	---
E. Trend by Year / Age - 3-Yr Avg	156-288	1.003	1.007	1.024	1.040	---	---	---	---	0.011	---	-0.2%	0.7%	1.7%	2.2%	---	---	---	---
F. Trend by Age - Latest Yr	156-288	0.997	1.012	---	---	---	---	---	---	---	---	-0.8%	1.1%	---	---	---	---	---	---
G. Trend by Age - 3-Yr Avg	156-288	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
H. Latest Year Unadj. Incurred	156-288	1.012	1.008	1.012	1.010	1.014	1.012	---	---	0.002	0.002	0.7%	0.7%	0.5%	-0.7%	0.7%	0.4%	---	---
I. Latest Year Unadj. Paid[1]	156-288	1.005	1.001	1.007	1.017	1.007	1.008	1.002	0.987	0.003	0.006	---	---	---	---	---	---	---	---

[1] Paid cumulative development factors are converted using the incurred to paid ratios at the beginning and ending ages.
[2] Highlighted numbers are less than 3% in absolute differences.

Projected Cumulative Medical Incurred Development Factors

Methodology	Age	Calender Year								Std. Dev.	Std. Dev.	Difference from the Latest Year Unadjusted Paid[2]							
		2017	2016	2015	2014	2013	2012	2011	2010	3-Yr	5-Yr	2017	2016	2015	2014	2013	2012	2011	2010
Incurred Adj. for Case Reserves:																			
Single Trend (Total Counts)	12-84	2.038	2.342	2.509	2.776	2.879	3.035	2.790	---	0.239	0.339	-7.1%	1.4%	8.2%	16.1%	11.8%	19.1%	14.1%	---
A. Single Trend - Latest Yr	12-84	2.098	2.365	2.509	2.749	2.879	3.035	2.818	---	0.208	0.310	-4.4%	2.4%	8.2%	15.0%	11.8%	19.1%	15.3%	---
B. Single Trend - 3-Yr Avg	12-84	2.293	2.541	2.733	2.955	3.004	2.885	2.666	---	0.221	0.296	4.5%	10.0%	17.9%	23.6%	16.6%	13.2%	9.0%	---
C. Filing Trend - Latest Yr	12-84	2.015	2.235	2.388	2.674	2.893	3.098	2.852	2.838	0.188	0.348	-8.2%	-3.2%	3.0%	11.8%	12.3%	21.5%	16.7%	12.2%
D. Trend by Year / Age - Latest Yr	12-84	2.018	2.312	2.396	2.639	2.936	3.079	2.792	---	0.199	0.346	-8.1%	0.1%	3.4%	10.4%	14.0%	20.8%	14.2%	---
E. Trend by Year / Age - 3-Yr Avg	12-84	2.261	2.467	2.620	2.878	2.967	2.813	---	---	0.180	0.290	3.0%	6.8%	13.0%	20.4%	15.2%	10.3%	---	---
F. Trend by Age - Latest Yr	12-84	2.084	2.333	2.461	2.692	2.819	2.994	2.772	---	0.192	0.291	-5.1%	1.0%	6.1%	12.6%	9.5%	17.4%	13.4%	---
G. Trend by Age - 3-Yr Avg	12-84	2.274	2.487	2.649	2.847	2.893	---	---	---	0.188	0.257	3.6%	7.7%	14.2%	19.1%	12.3%	---	---	---
H. Latest Year Unadj. Incurred	12-84	2.021	2.129	2.201	2.479	2.672	2.897	2.728	2.717	0.090	0.268	-7.9%	-7.8%	-5.1%	3.7%	3.7%	13.6%	11.6%	7.4%
I. Latest Year Unadj. Paid[1]	12-84	2.195	2.310	2.318	2.391	2.576	2.549	2.445	2.528	0.069	0.140	---	---	---	---	---	---	---	---
Incurred Adj. for Case Reserves:																			
Single Trend (Total Counts)	84-156	1.083	1.098	1.128	1.131	1.104	1.169	1.157	---	0.023	0.020	-3.3%	-4.4%	-1.8%	-2.2%	-5.0%	4.2%	2.5%	---
A. Single Trend - Latest Yr	84-156	1.094	1.102	1.128	1.126	1.104	1.169	1.162	---	0.018	0.015	-2.3%	-4.0%	-1.8%	-2.6%	-5.0%	4.2%	3.0%	---
B. Single Trend - 3-Yr Avg	84-156	1.115	1.155	1.132	1.127	1.126	1.154	1.156	---	0.020	0.015	-0.4%	0.6%	-1.5%	-2.4%	-3.1%	2.8%	2.4%	---
C. Filing Trend - Latest Yr	84-156	1.067	1.056	1.112	1.118	1.134	1.226	1.217	1.261	0.030	0.034	-4.7%	-8.0%	-3.2%	-3.3%	-2.4%	9.3%	7.8%	10.6%
D. Trend by Year / Age - Latest Yr	84-156	1.102	1.113	1.161	1.155	1.137	1.177	1.149	---	0.031	0.026	-1.6%	-3.1%	1.1%	0.0%	-2.2%	4.9%	1.8%	---
E. Trend by Year / Age - 3-Yr Avg	84-156	1.130	1.169	1.172	1.158	1.138	1.154	---	---	0.023	0.019	0.9%	1.8%	2.0%	0.2%	-2.1%	2.8%	---	---
F. Trend by Age - Latest Yr	84-156	1.119	1.124	1.140	1.124	1.094	1.157	1.147	---	0.011	0.017	0.0%	-2.1%	-0.8%	-2.7%	-5.9%	3.1%	1.6%	---
G. Trend by Age - 3-Yr Avg	84-156	1.144	1.184	1.154	1.134	1.123	---	---	---	0.021	0.023	2.2%	3.2%	0.4%	-1.9%	-3.4%	---	---	---
H. Latest Year Unadj. Incurred	84-156	1.032	1.037	1.073	1.112	1.154	1.174	1.172	1.177	0.022	0.051	-7.8%	-9.6%	-6.6%	-3.8%	-0.7%	4.7%	3.9%	3.1%
I. Latest Year Unadj. Paid[1]	84-156	1.120	1.148	1.149	1.156	1.162	1.122	1.128	1.141	0.017	0.016	---	---	---	---	---	---	---	---
Incurred Adj. for Case Reserves:																			
Single Trend (Total Counts)	156-288	1.065	1.078	1.173	1.204	1.183	1.176	---	---	0.059	---	-0.8%	1.4%	9.4%	12.2%	13.9%	13.9%	---	---
A. Single Trend - Latest Yr	156-288	1.078	1.083	1.173	1.199	1.183	1.176	---	---	0.054	---	0.4%	1.8%	9.4%	11.7%	13.9%	13.9%	---	---
B. Single Trend - 3-Yr Avg	156-288	1.087	1.119	1.180	1.188	---	---	---	---	0.047	---	1.2%	5.2%	10.0%	10.7%	---	---	---	---
C. Filing Trend - Latest Yr	156-288	1.047	1.038	1.078	1.085	1.087	1.121	---	---	0.021	---	-2.5%	-2.4%	0.4%	1.1%	4.6%	8.6%	---	---
D. Trend by Year / Age - Latest Yr	156-288	1.100	1.106	1.171	1.194	1.184	---	---	---	0.040	---	2.4%	4.0%	9.2%	11.3%	14.0%	---	---	---
E. Trend by Year / Age - 3-Yr Avg	156-288	1.108	1.139	1.175	1.182	---	---	---	---	0.034	---	3.2%	7.1%	9.6%	10.2%	---	---	---	---
F. Trend by Age - Latest Yr	156-288	1.092	1.084	---	---	---	---	---	---	---	---	1.6%	2.0%	---	---	---	---	---	---
G. Trend by Age - 3-Yr Avg	156-288	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
H. Latest Year Unadj. Incurred	156-288	0.959	0.981	0.994	1.063	1.065	1.086	---	---	0.018	0.049	-10.7%	-7.7%	-7.3%	-1.0%	2.5%	5.2%	---	---
I. Latest Year Unadj. Paid[1]	156-288	1.074	1.064	1.073	1.073	1.039	1.032	1.020	0.994	0.006	0.015	---	---	---	---	---	---	---	---

[1] Paid cumulative development factors are converted using the incurred to paid ratios at the beginning and ending ages.

[2] Highlighted numbers are less than 3% in absolute differences.

Incurred Medical Loss Development Factors Adjusted for Changes in Case Reserve Adequacy
Based on Applying Separate Trends by Year and Age using Paid per Closed Indemnity Claim

Accident Year	12-24	24-36	36-48	48-60	60-72	72-84	84-96	96-108	108-120	120-132	132-144	144-156	156-168	168-180	180-192	192-204	204-216	216-228	228-240	240-252	252-264	264-276	276-288	288-300	300-312	312-324	324-336
1990																				1.002	1.010	1.008	1.005	1.003	0.998	0.995	1.004
1991																			1.017	1.001	1.011	1.007	1.009	1.003	0.998	0.994	
1992																		1.009	1.012	1.004	1.013	1.010	1.006	1.002	0.999		
1993																	1.016	1.013	1.022	1.008	1.018	1.012	1.006	1.005			
1994																1.012	1.016	1.016	1.025	1.006	1.016	1.011	1.008				
1995															1.013	1.013	1.021	1.020	1.028	1.007	1.017	1.014					
1996														1.008	1.008	1.014	1.021	1.016	1.027	1.002	1.017						
1997													1.012	1.004	1.008	1.013	1.021	1.016	1.024	1.000							
1998												1.028	1.010	1.006	1.010	1.016	1.021	1.013	1.029								
1999											1.013	1.032	1.008	1.002	1.010	1.015	1.019	1.012									
2000										1.030	1.006	1.027	1.012	1.001	1.004	1.008	1.015										
2001									1.036	1.033	1.008	1.031	1.009	0.998	0.999	1.008											
2002								1.037	1.032	1.032	1.003	1.024	1.004	0.991	0.999												
2003							1.021	1.040	1.038	1.033	1.009	1.027	1.000	0.992													
2004						1.046	1.030	1.053	1.036	1.037	1.008	1.018	1.002														
2005					1.064	1.049	1.038	1.055	1.039	1.033	1.000	1.020															
2006				1.085	1.070	1.054	1.035	1.043	1.036	1.022	1.000																
2007			1.113	1.087	1.075	1.051	1.033	1.043	1.025	1.019																	
2008		1.249	1.114	1.101	1.070	1.043	1.024	1.029	1.023																		
2009	1.593	1.259	1.138	1.104	1.068	1.036	1.011	1.026																			
2010	1.650	1.283	1.130	1.093	1.053	1.029	1.010																				
2011	1.726	1.272	1.113	1.079	1.049	1.022																					
2012	1.647	1.240	1.091	1.069	1.034																						
2013	1.593	1.205	1.072	1.049																							
2014	1.587	1.191	1.060																								
2015	1.580	1.140																									
2016	1.506																										
Latest Year	1.506	1.140	1.060	1.049	1.034	1.022	1.010	1.026	1.023	1.019	1.000	1.020	1.002	0.992	0.999	1.008	1.015	1.012	1.029	1.000	1.017	1.014	1.008	1.005	0.999	0.994	1.004
3-Yr Avg.	1.557	1.179	1.075	1.066	1.045	1.029	1.015	1.033	1.028	1.025	1.002	1.022	1.002	0.994	1.000	1.010	1.018	1.014	1.027	1.003	1.017	1.012	1.006	1.003	0.998	---	---

The meeting was adjourned at 1:30 PM.

Note to Committee Members: These Minutes, as written, have not been approved. Please refer to the meeting scheduled for September 4, 2018 for approval and/or modification.