

WCIRB Actuarial Committee Meeting

August 1, 2018

Agenda

1. AC18-08-01: Third Quarter 2018 Review of Diagnostics
2. AC17-12-04: Earthquake Study
3. AC18-08-04: Study of Case Reserve-adjusted Loss Development Methodology
4. AC14-08-06: Reform Adjustments to Loss Development
5. AC18-06-01: 3/31/2018 Experience – Review of Methodologies
6. AC18-08-02: 1/1/2019 Filing – Loss Adjustment Expense Experience Review

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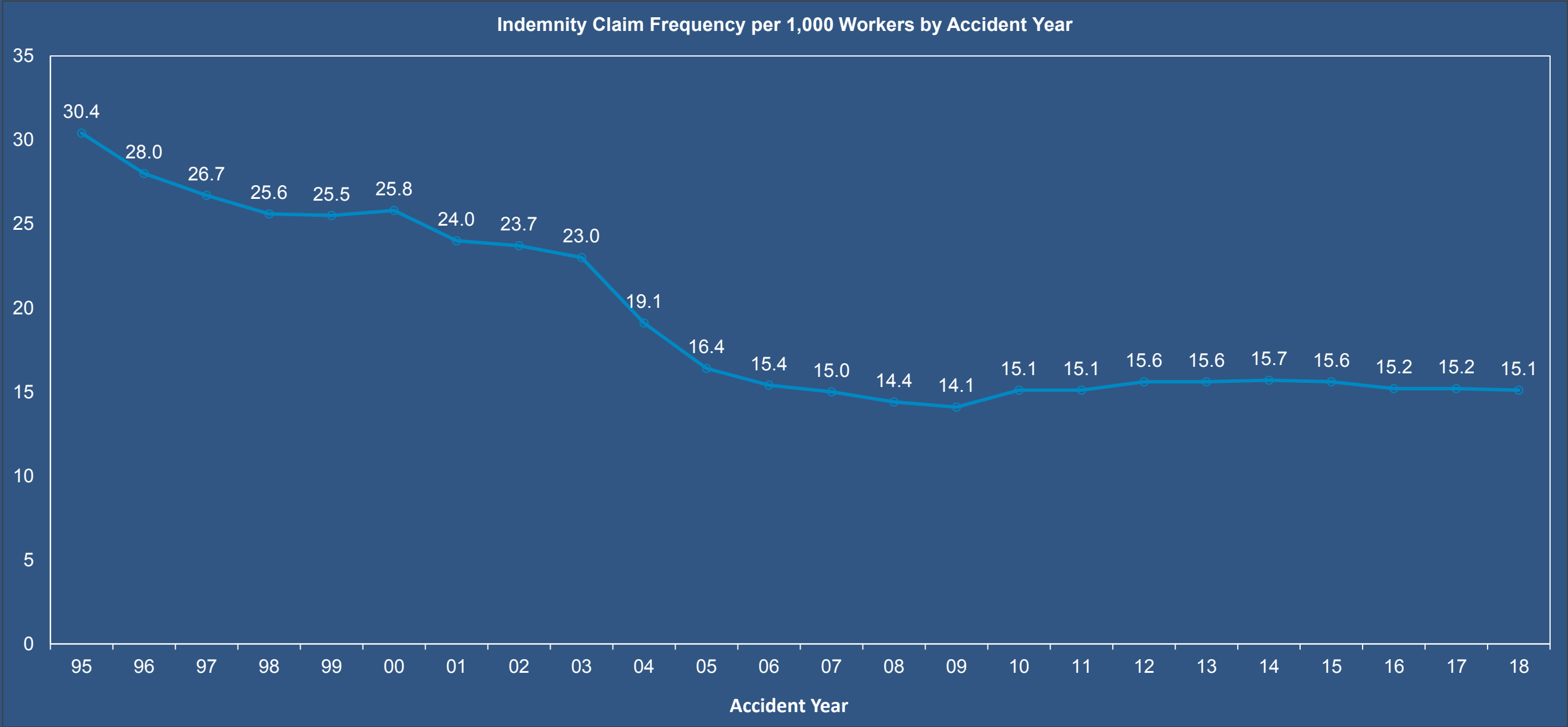
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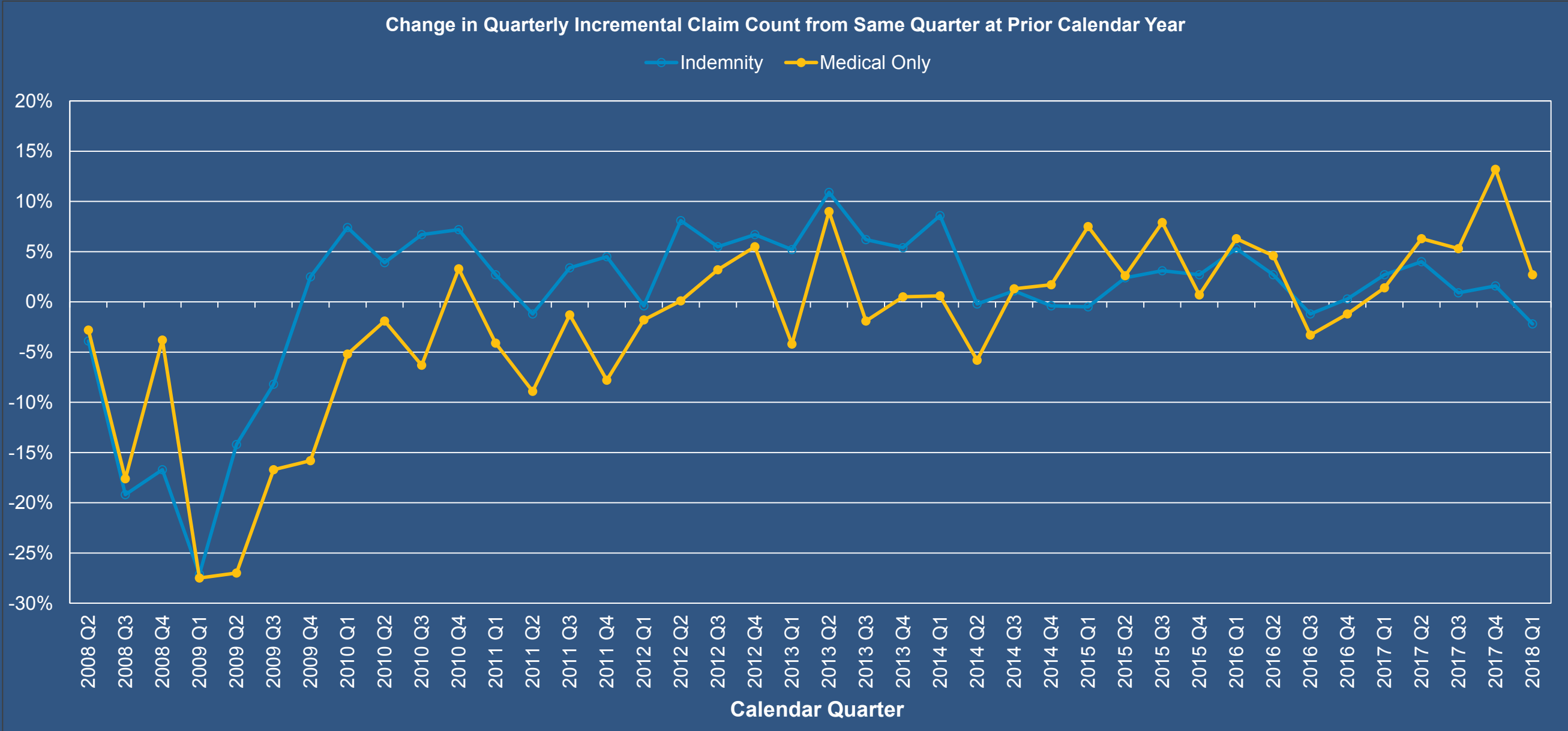
Third Quarter 2018 Review of Diagnostics



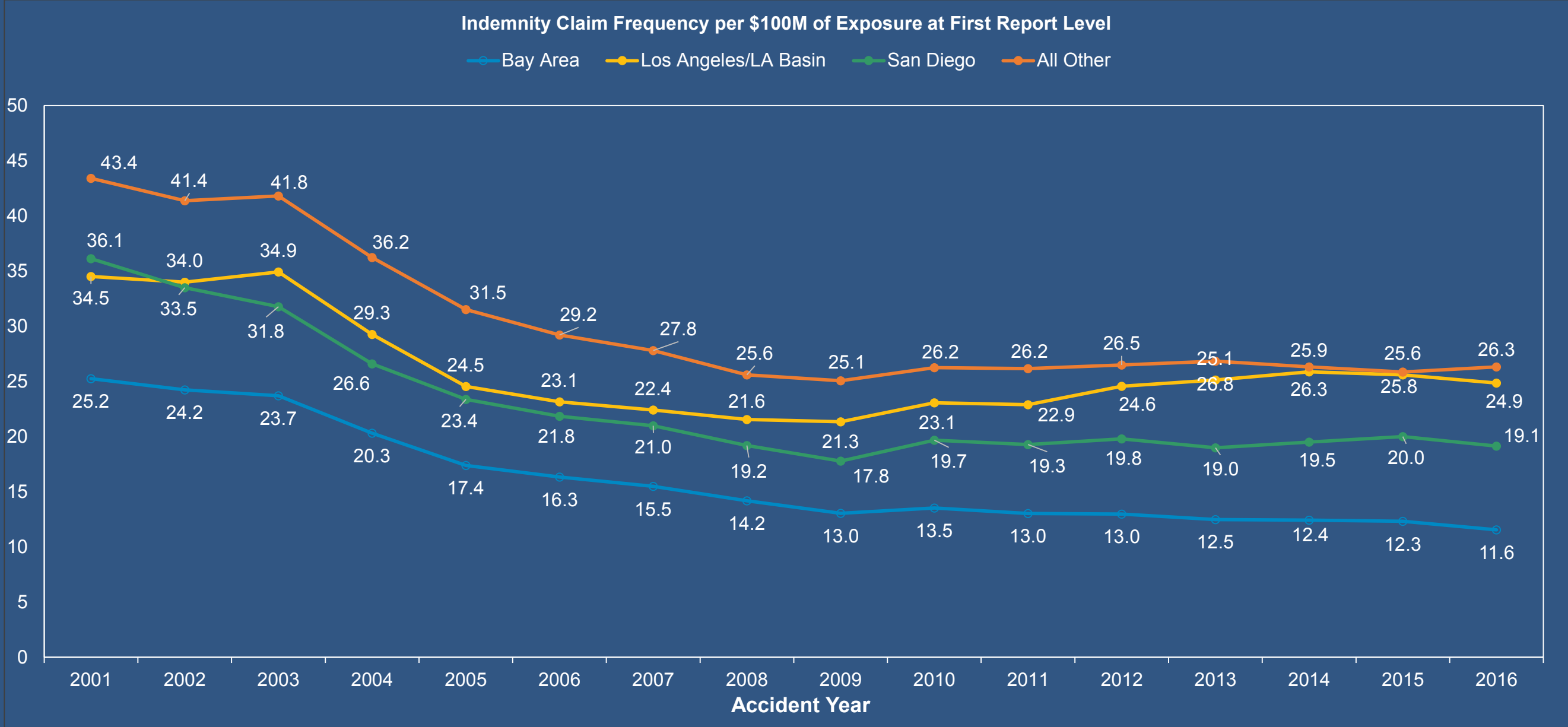
Indemnity Claim Frequency (Exhibit C6)



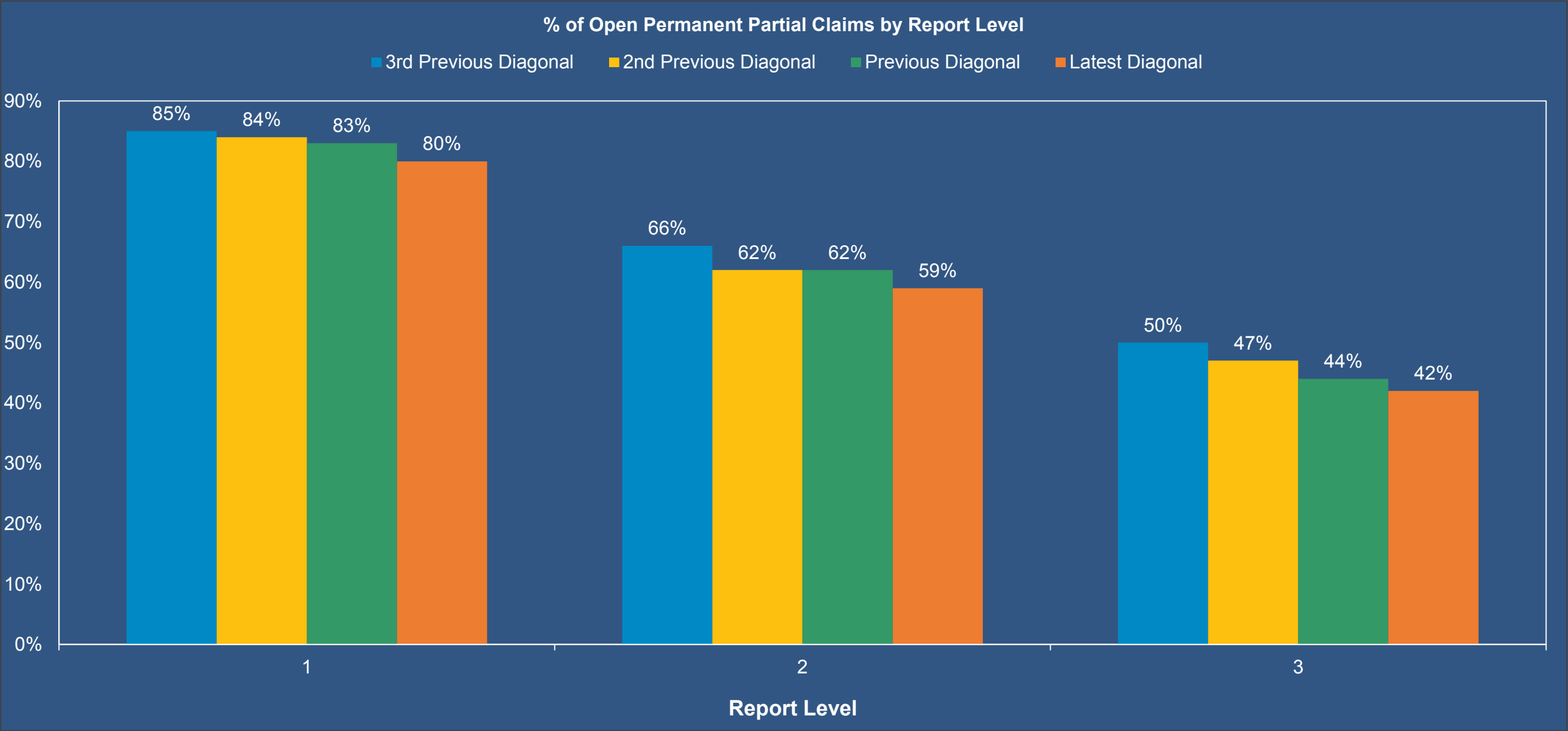
Changes in Incremental Claim Counts (Exhibit C11)



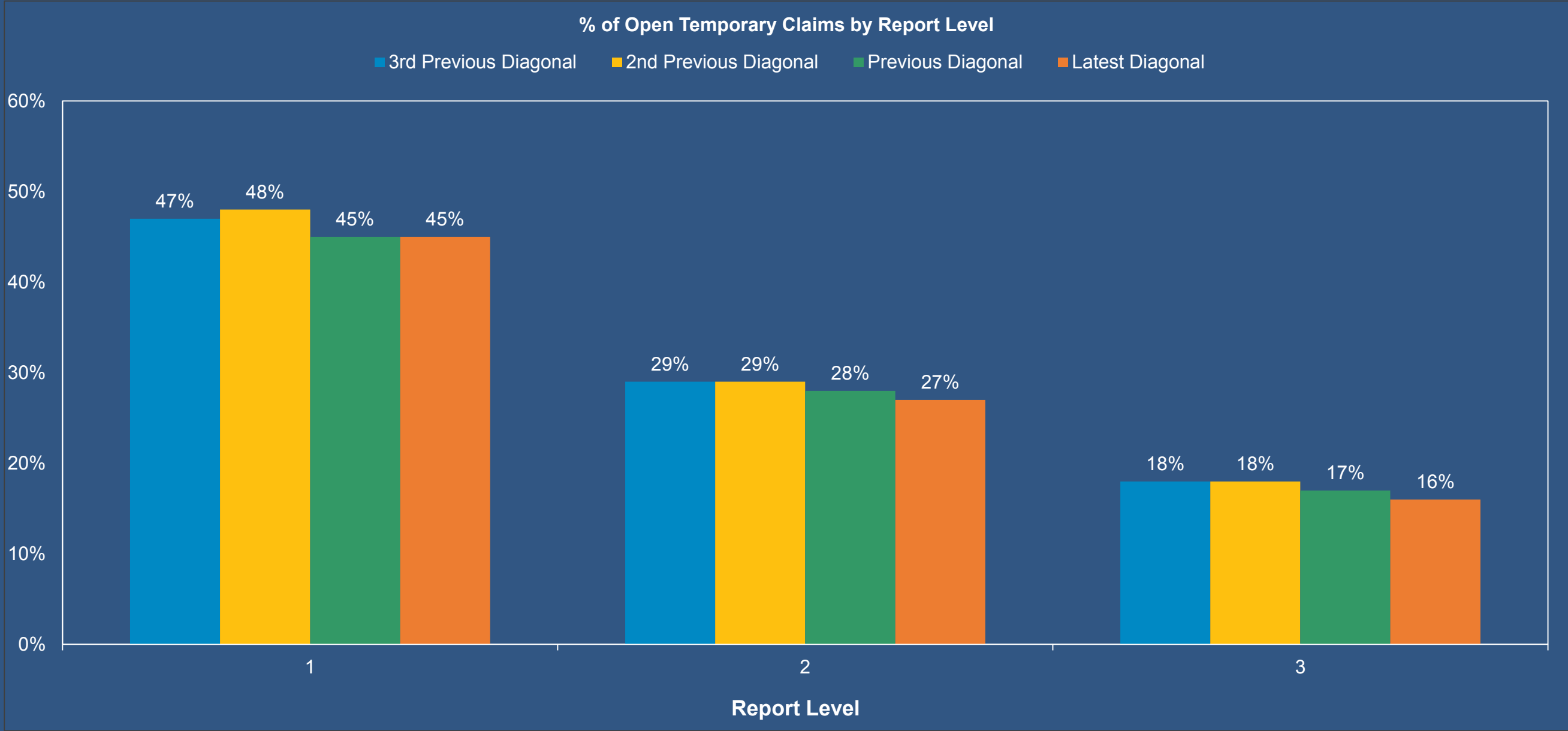
Indemnity Claim Frequency (Exhibit C21)



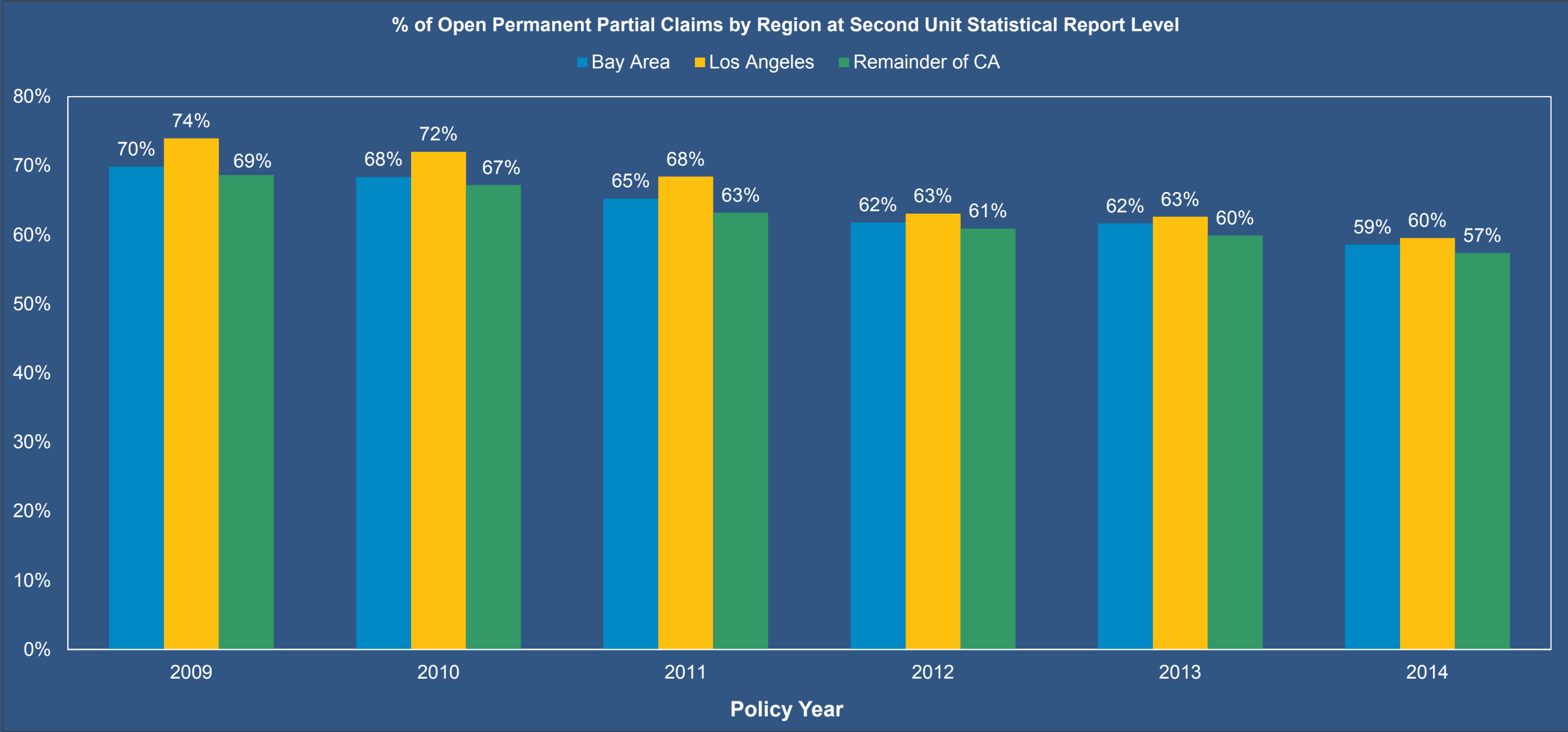
Percentage of PPD Claims Open by Report Level (Exhibit M5)



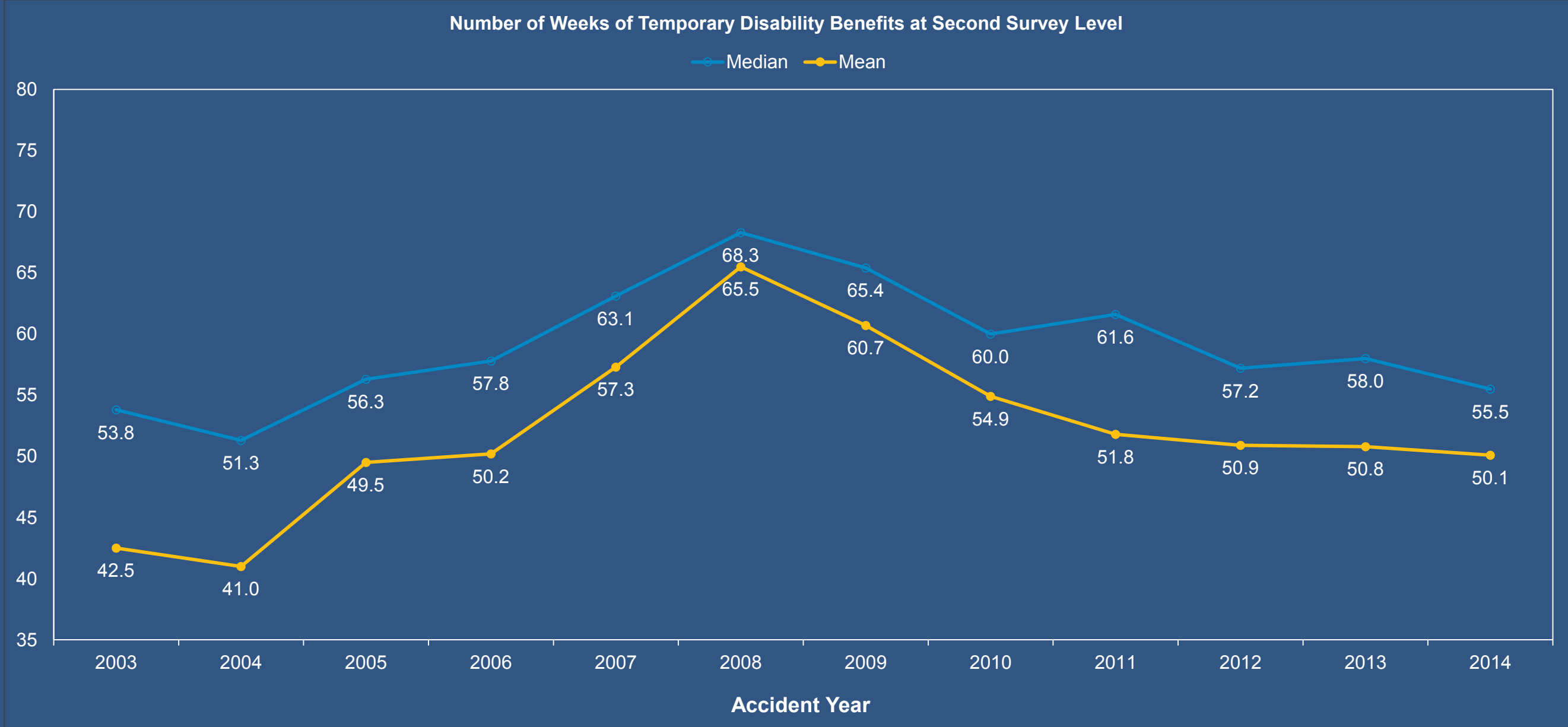
Percentage of Temporary Claims Open by Report Level (Exhibit M5)



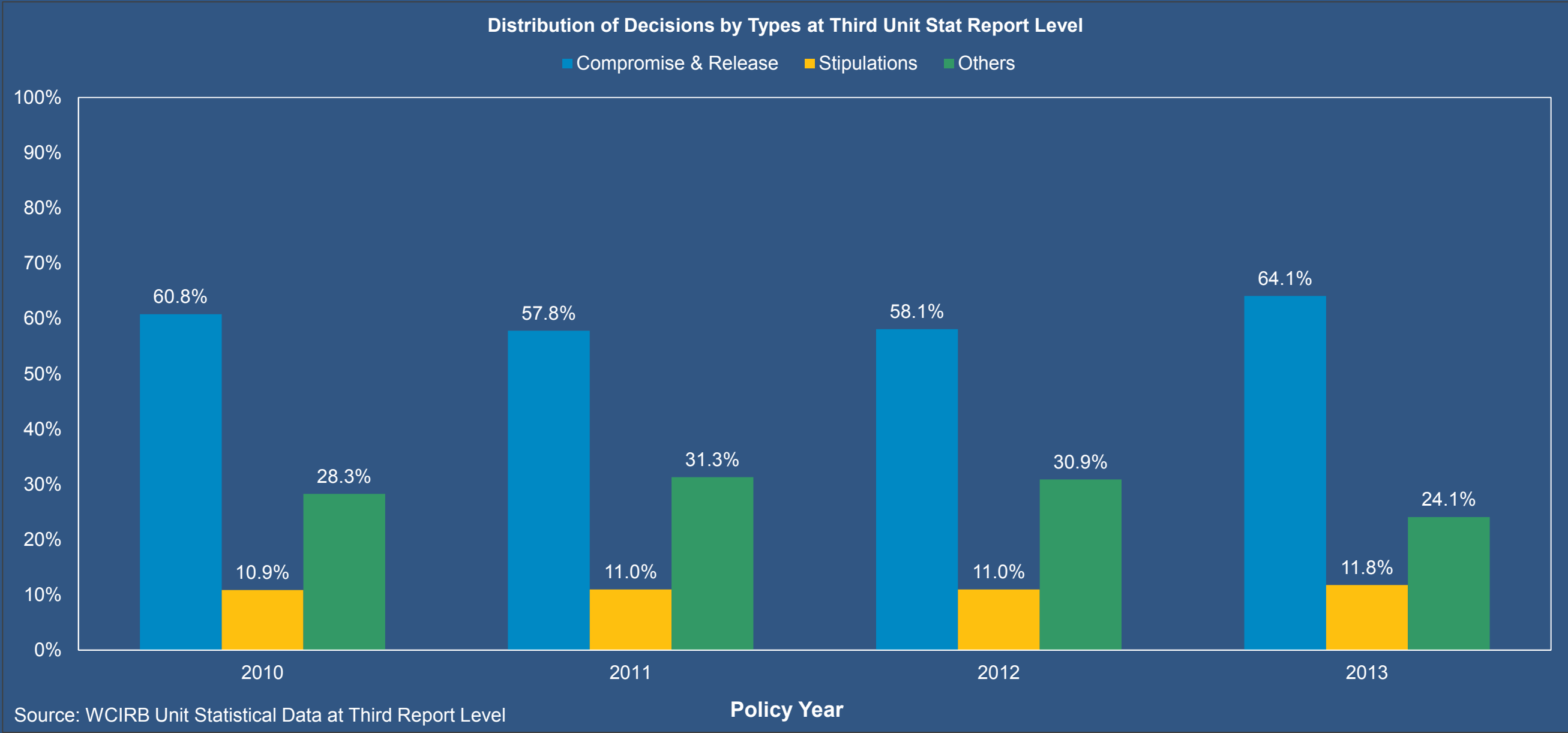
Percentage of PPD Claims Open by Region (Exhibit M5)



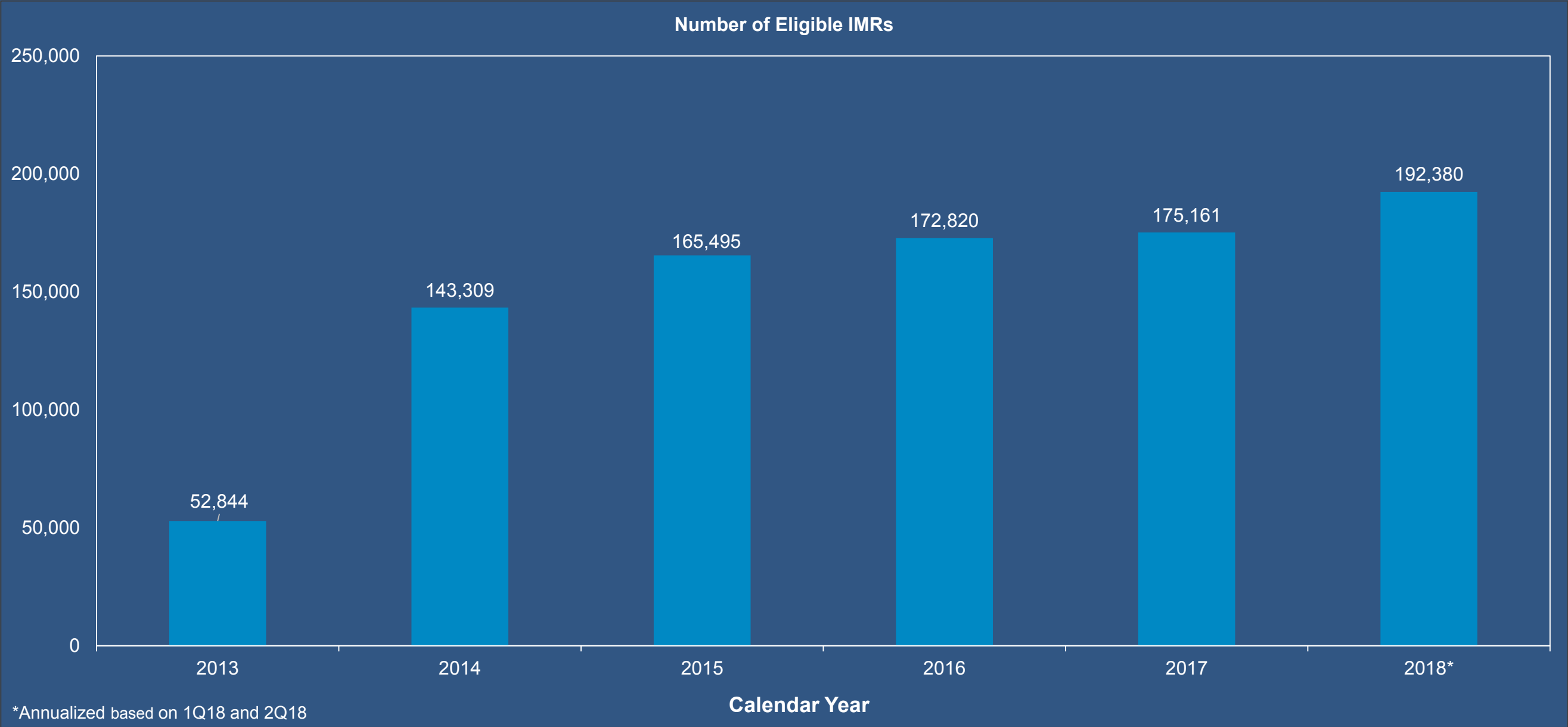
Temporary Disability Duration (Exhibit S10)



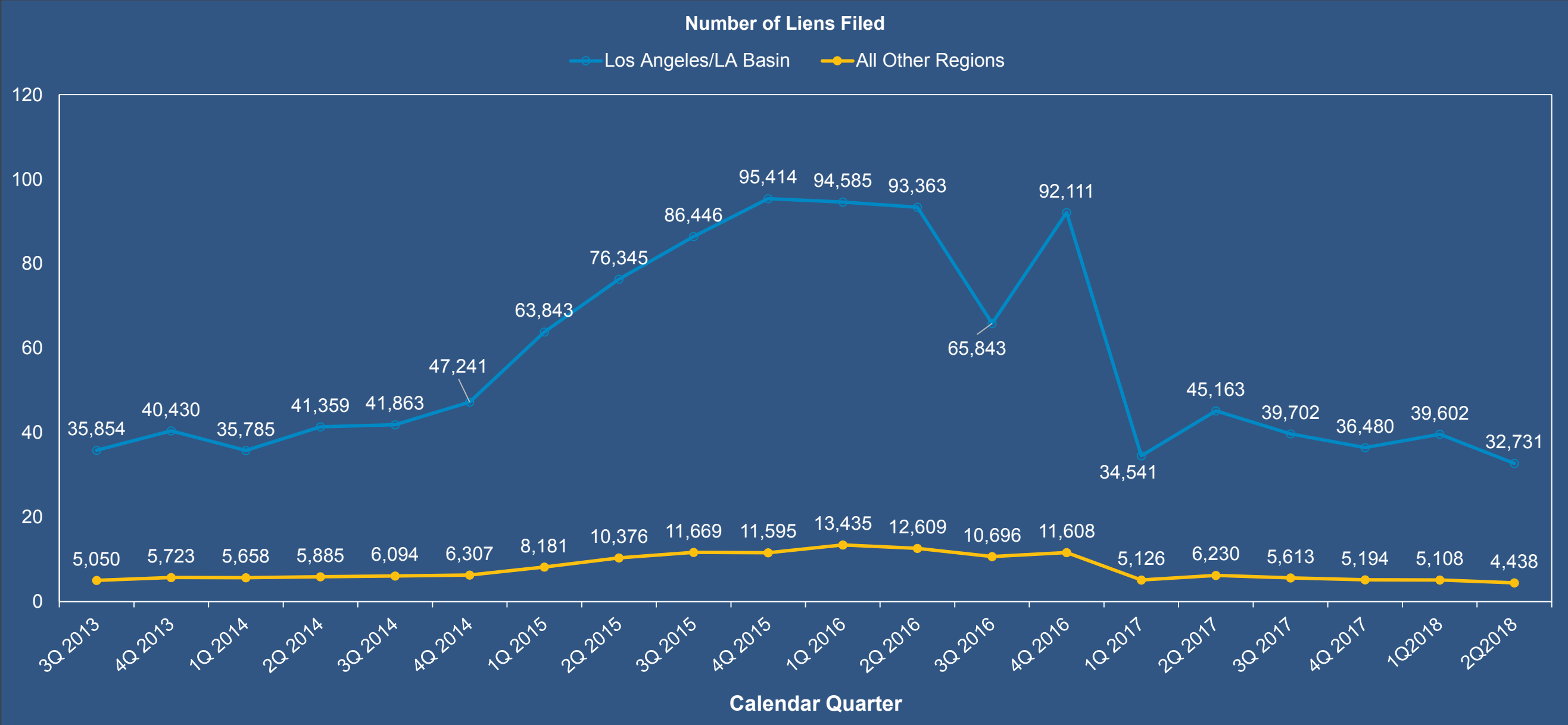
Settlement Type Distribution (Exhibit M6.1)



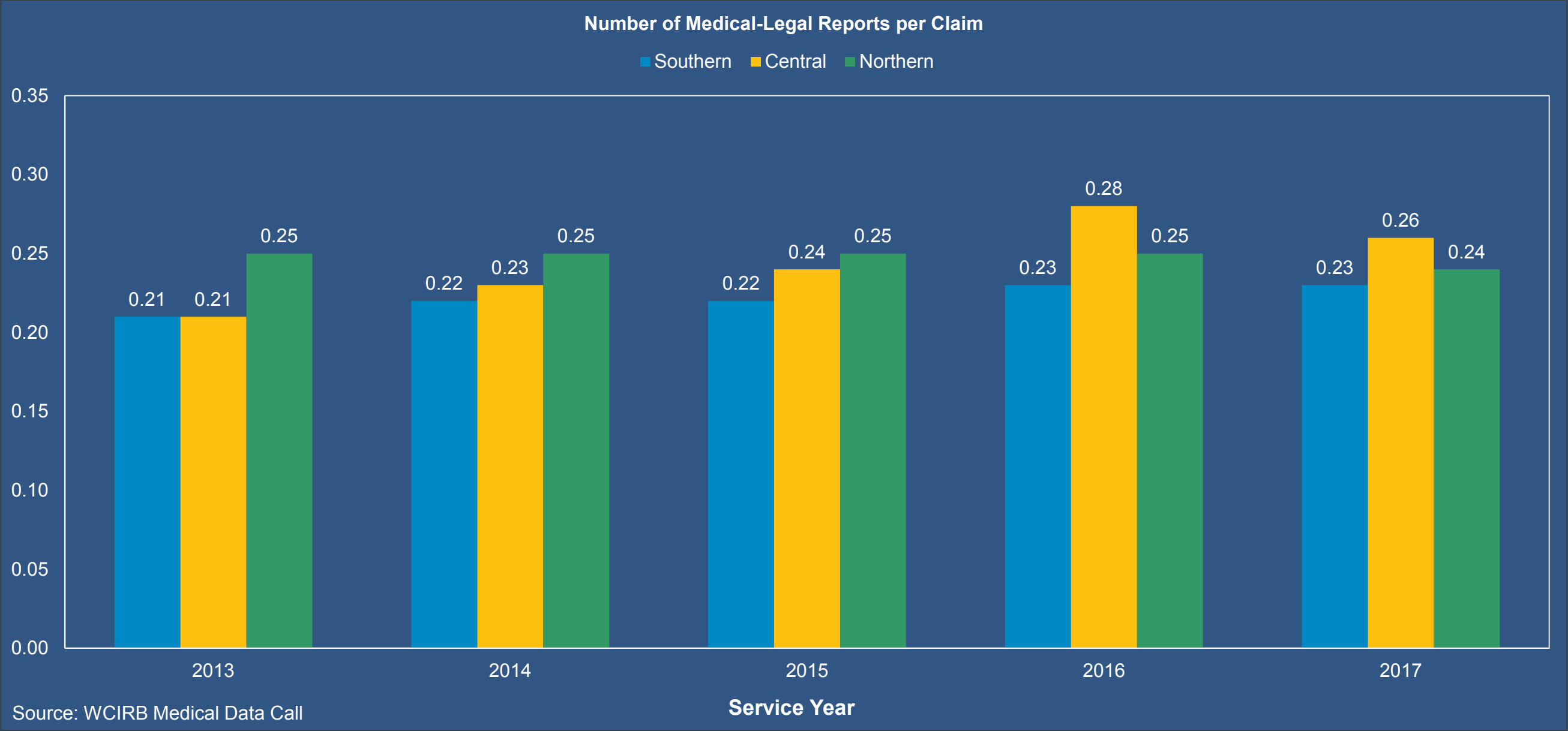
Independent Medical Review (Exhibit M14, Updated)



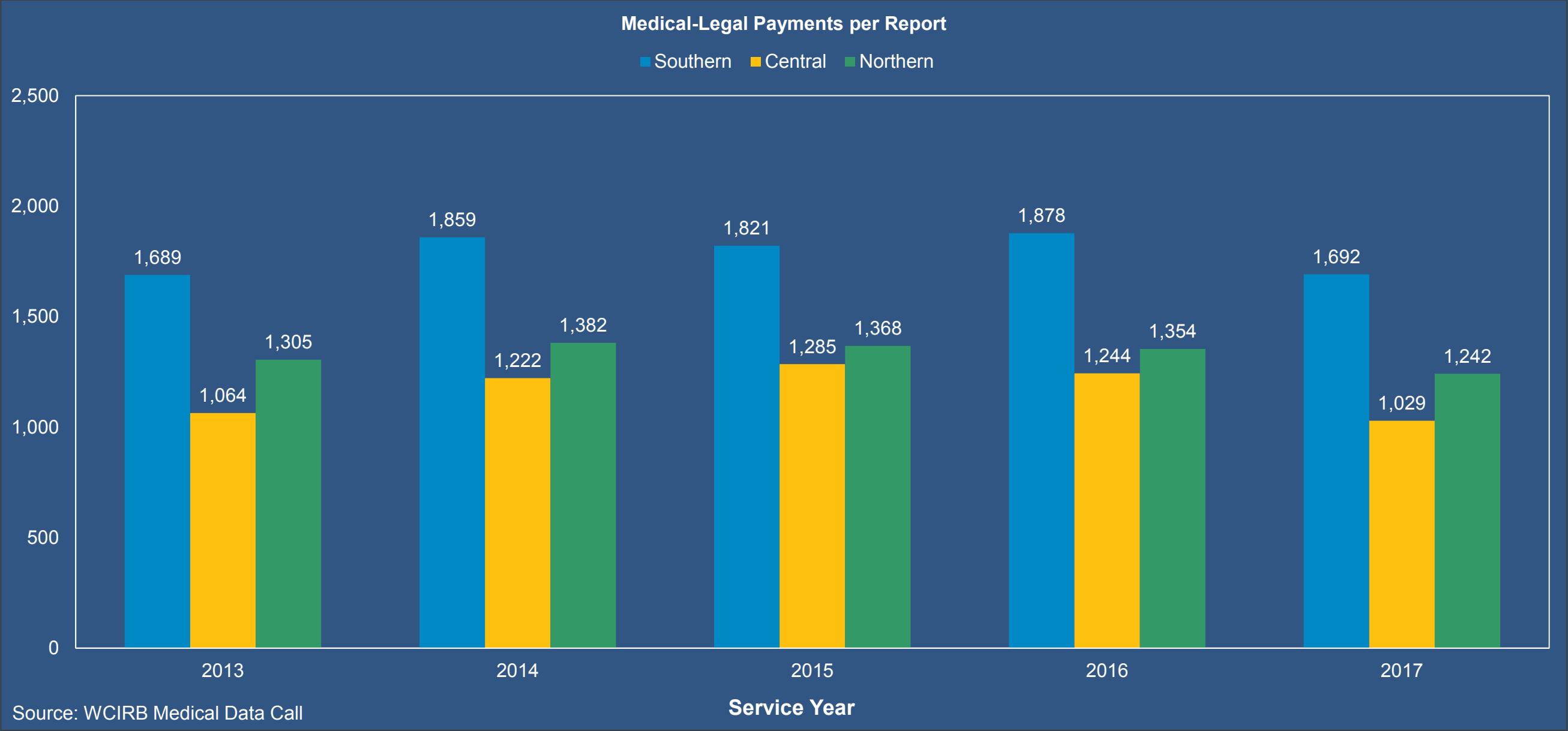
Filed Lien Counts (Exhibit M9.2, Updated)



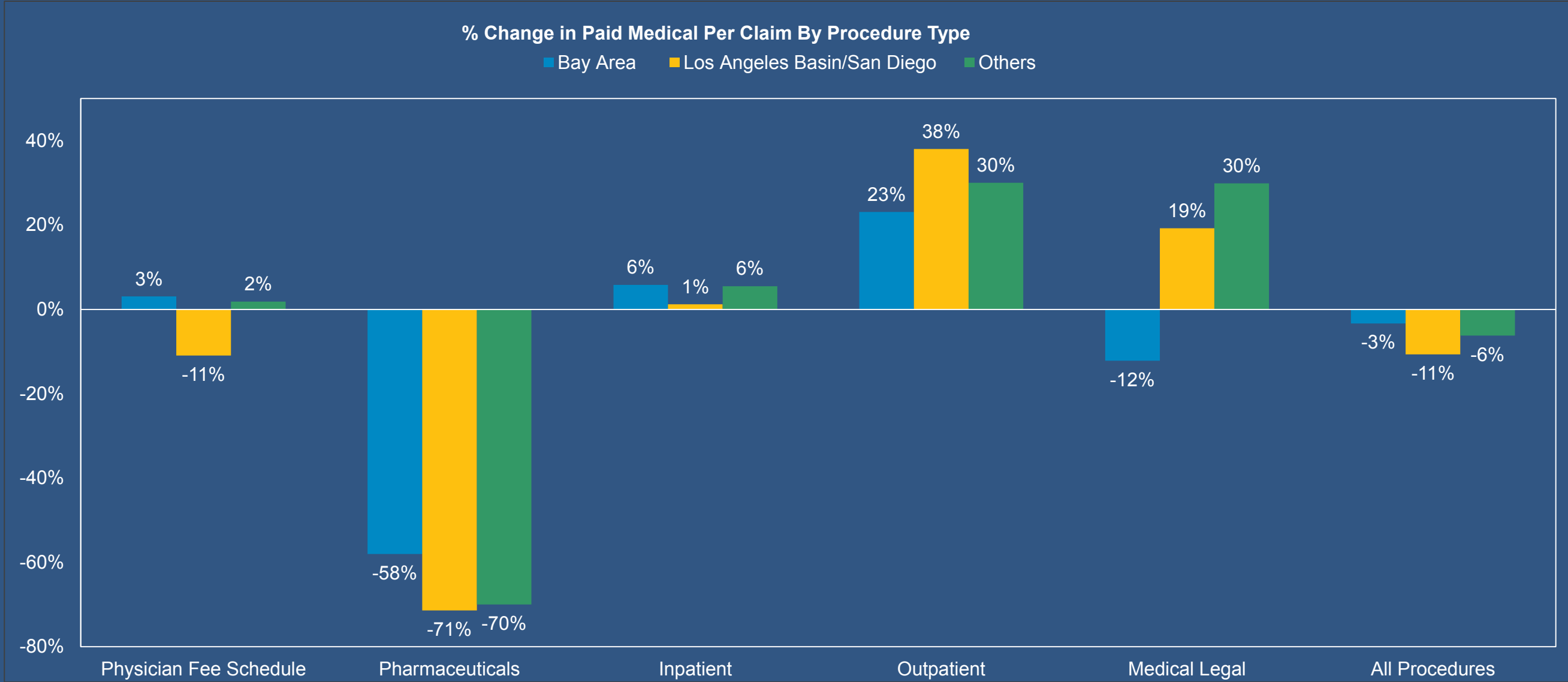
Medical-Legal Reports (Exhibit E13)



Medical-Legal Reports (Exhibit E13)



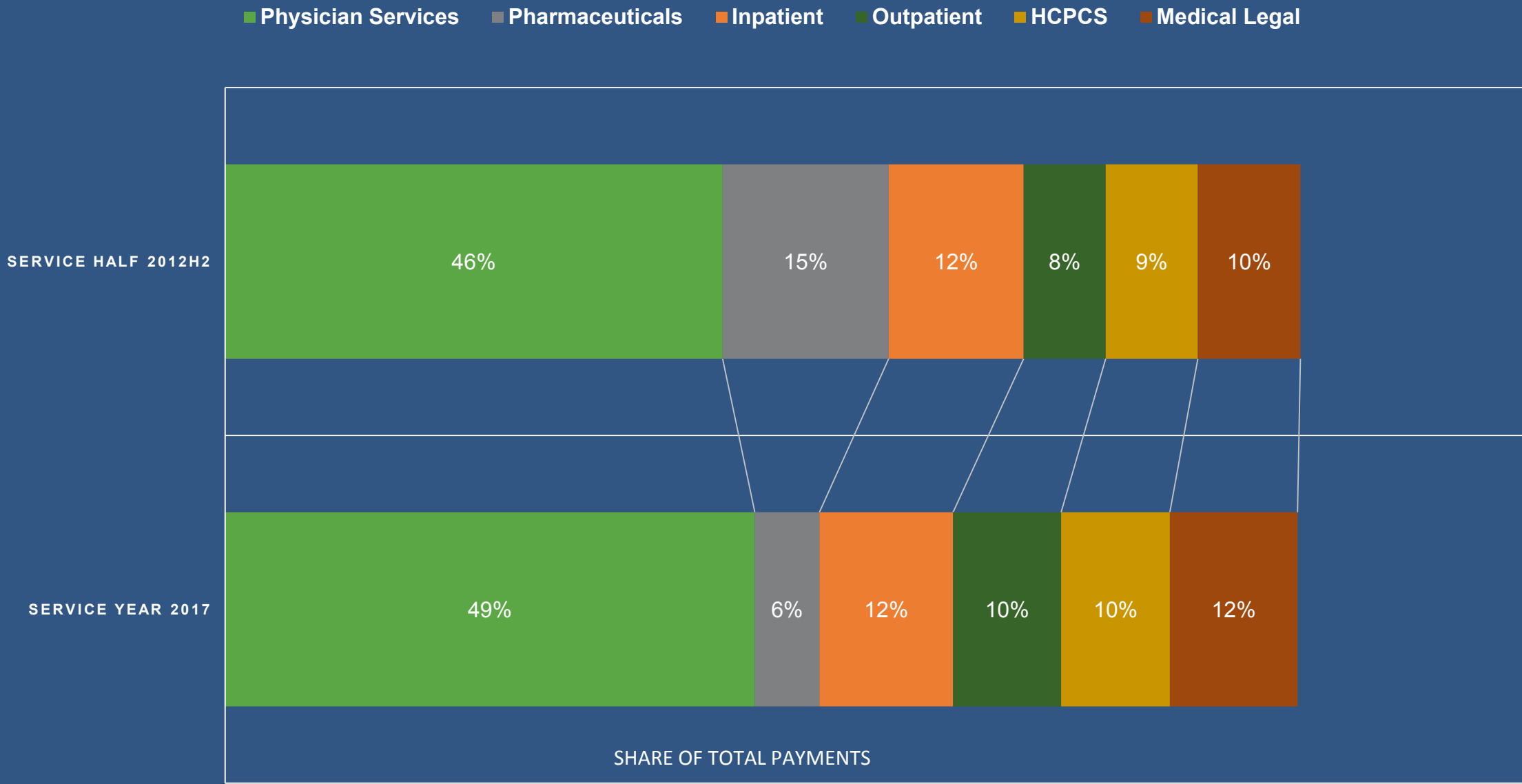
Change in Average Paid Medical by Region Service Year 2013 to 2017



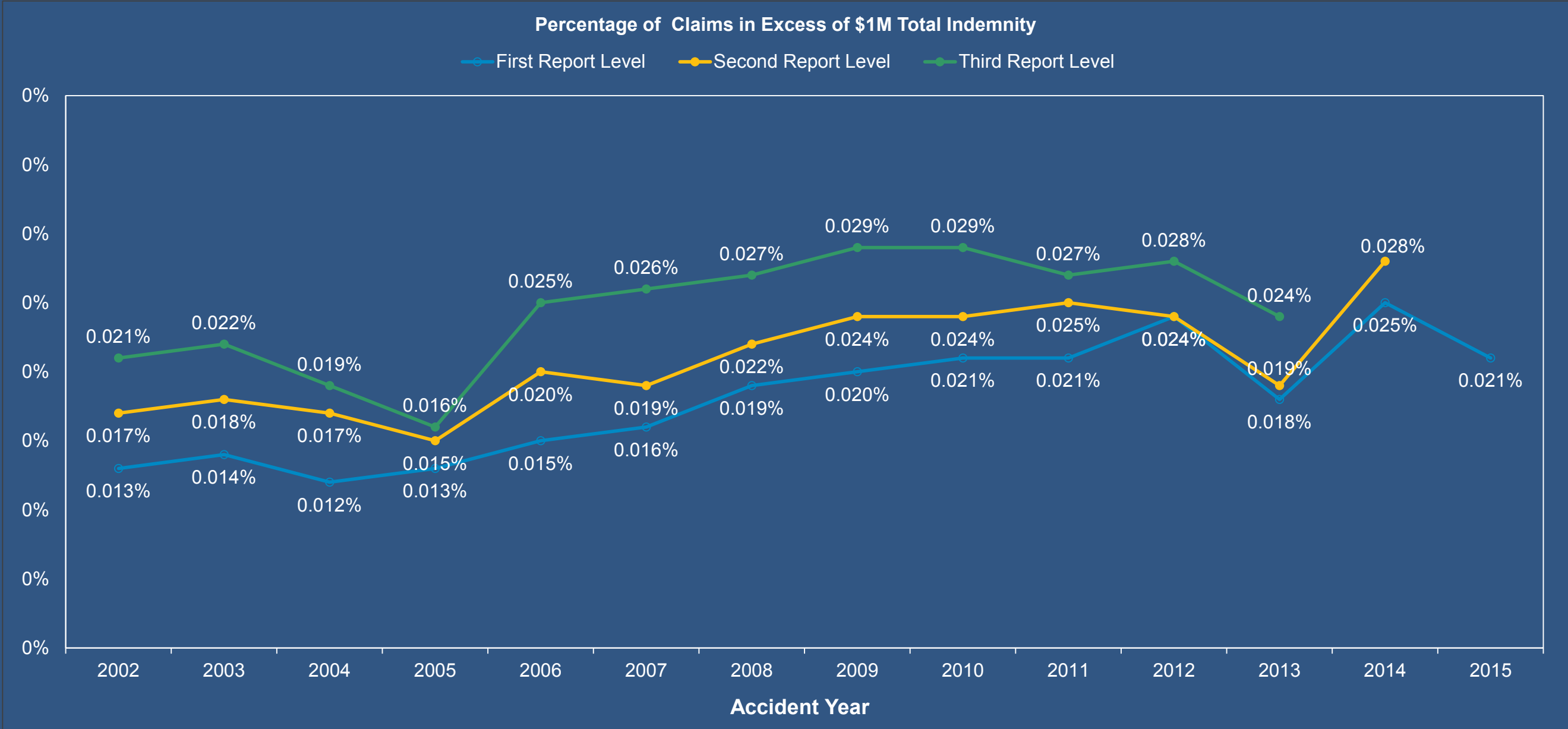
Source: WCIRB Medical Transaction Data (excluding liens)

Share of Total Medical Payments by Service Type

As of April 7, 2018

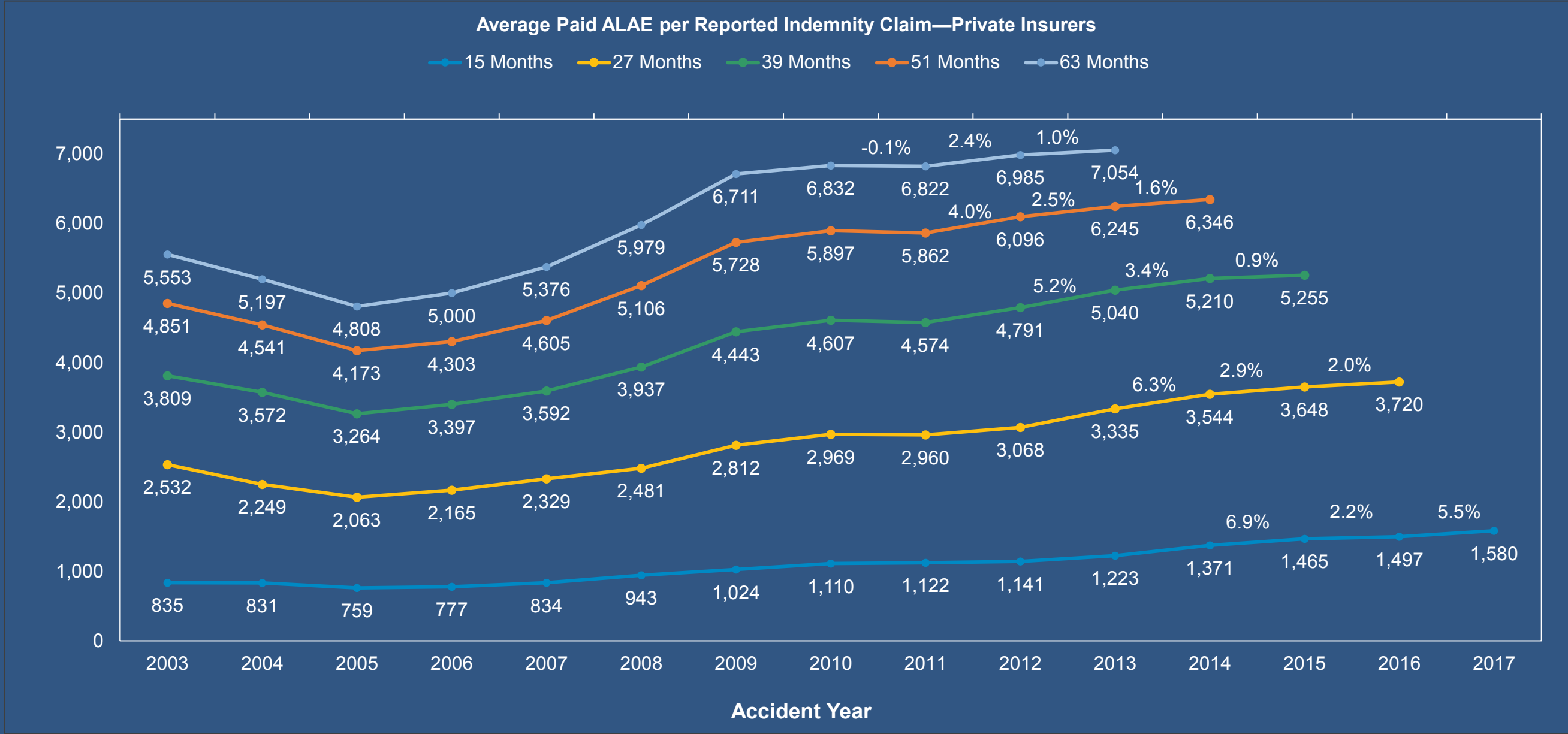


Large Claims (Exhibit S16.3)

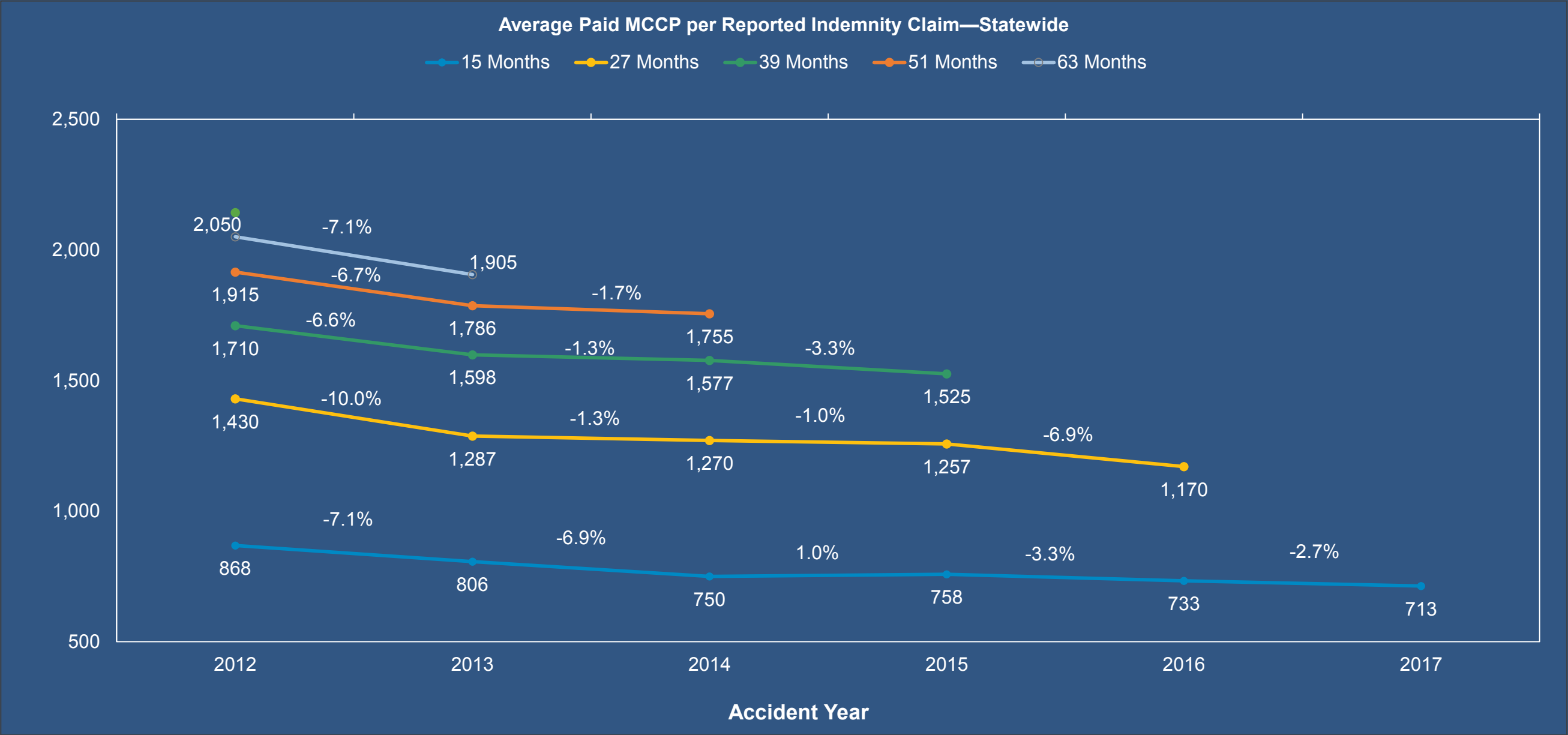


Paid ALAE per Indemnity Claim—Private Insurers

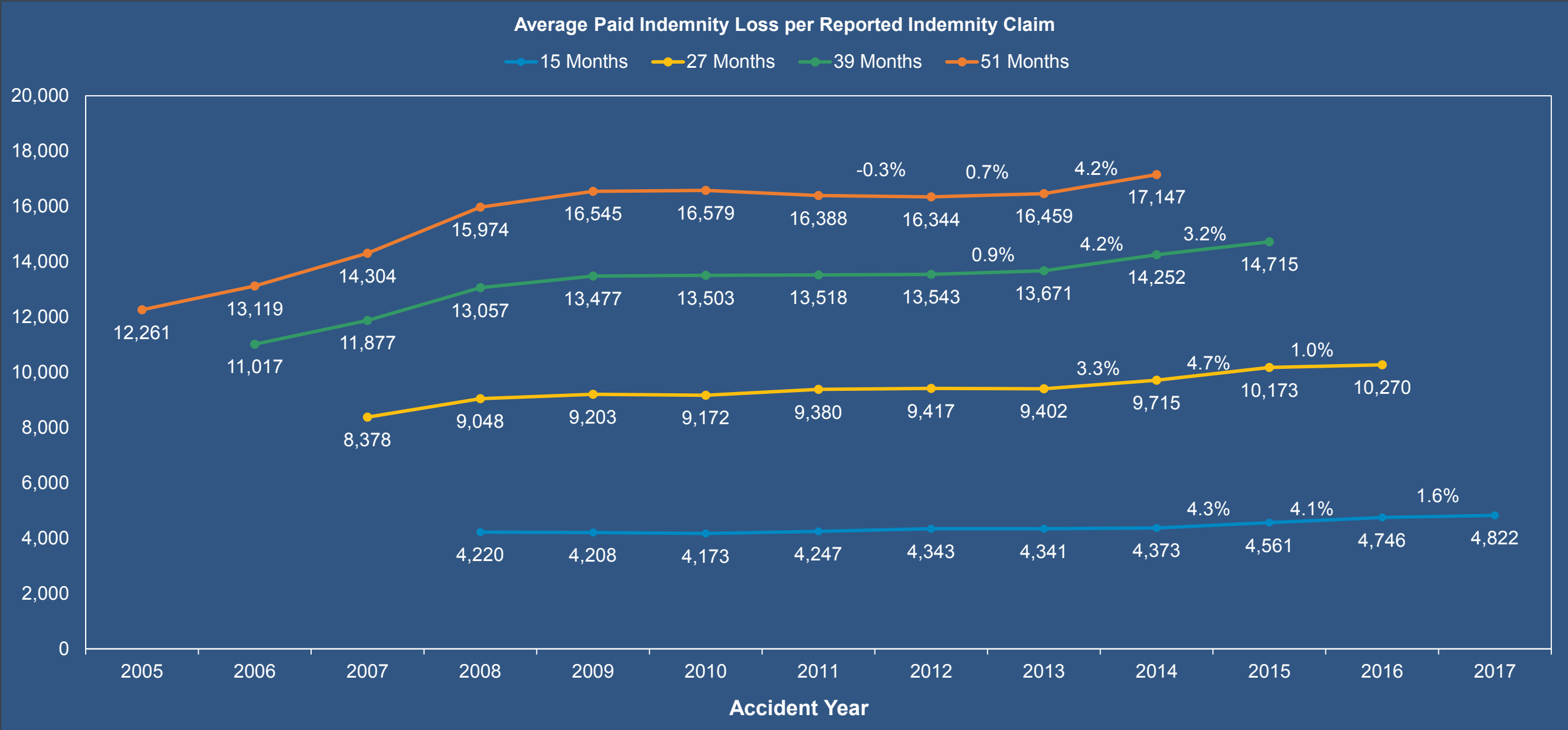
(Exhibit E5)



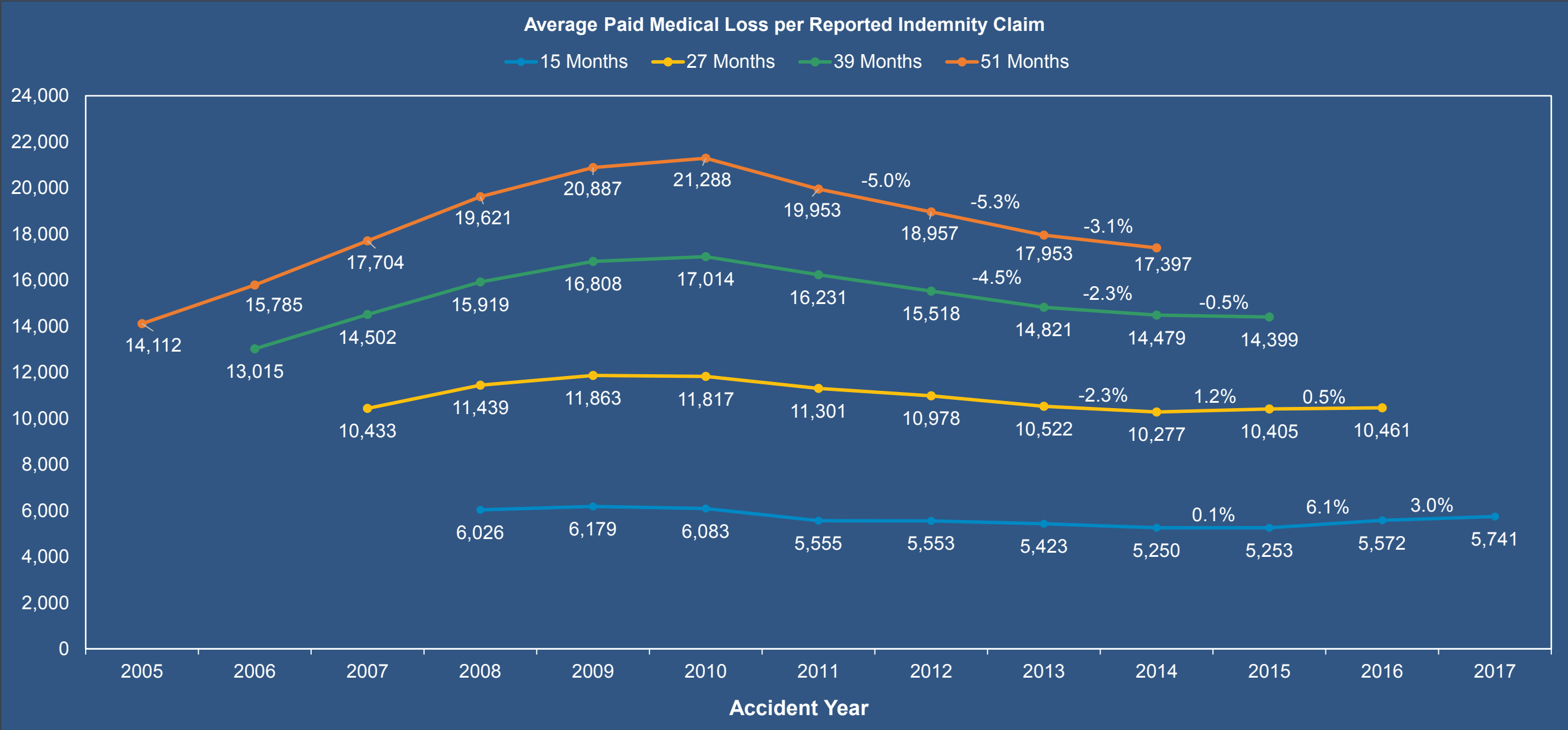
Paid MCCP per Indemnity Claim – Statewide (Exhibit E15)



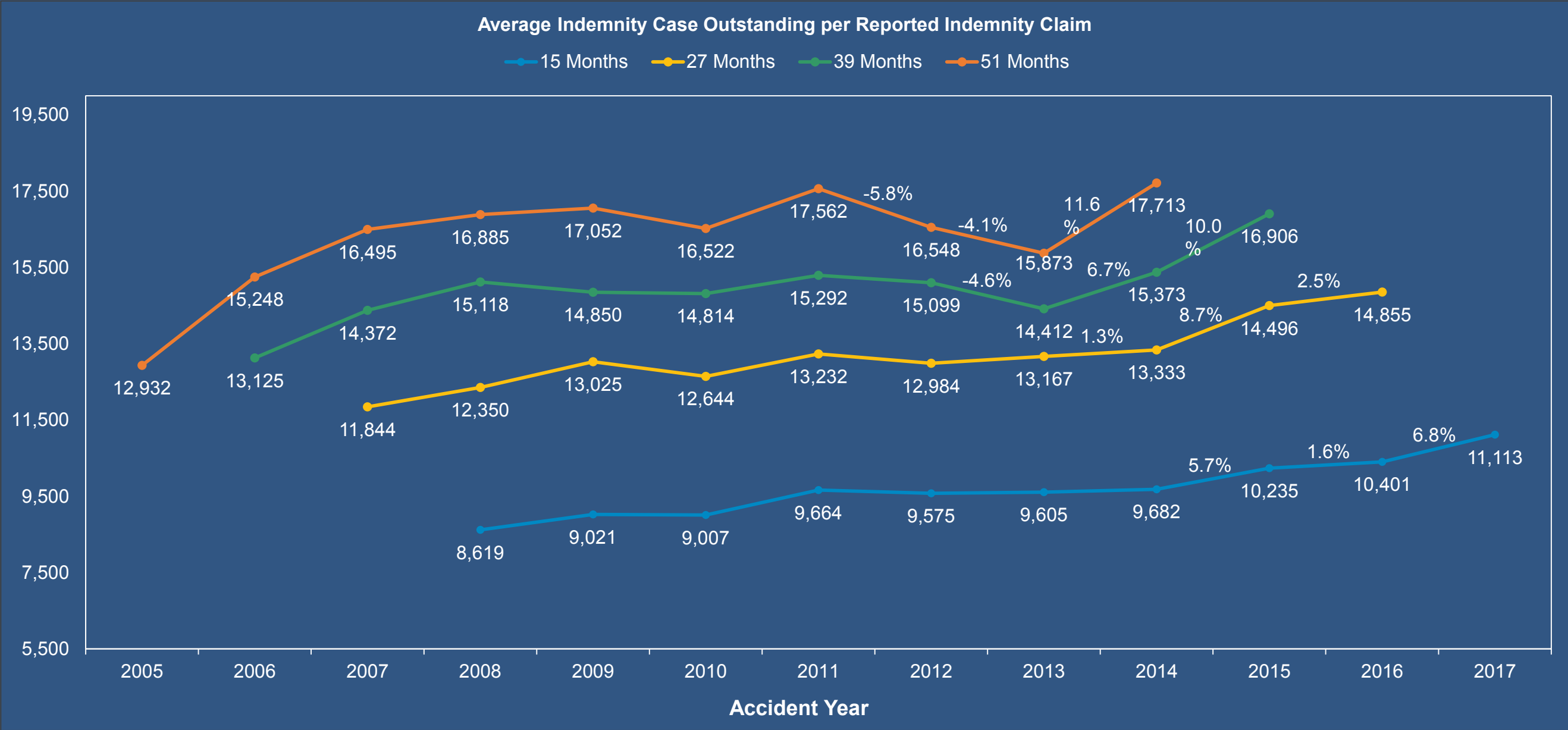
Severity – Paid Indemnity per Indemnity Claim (Exhibit S4.1)



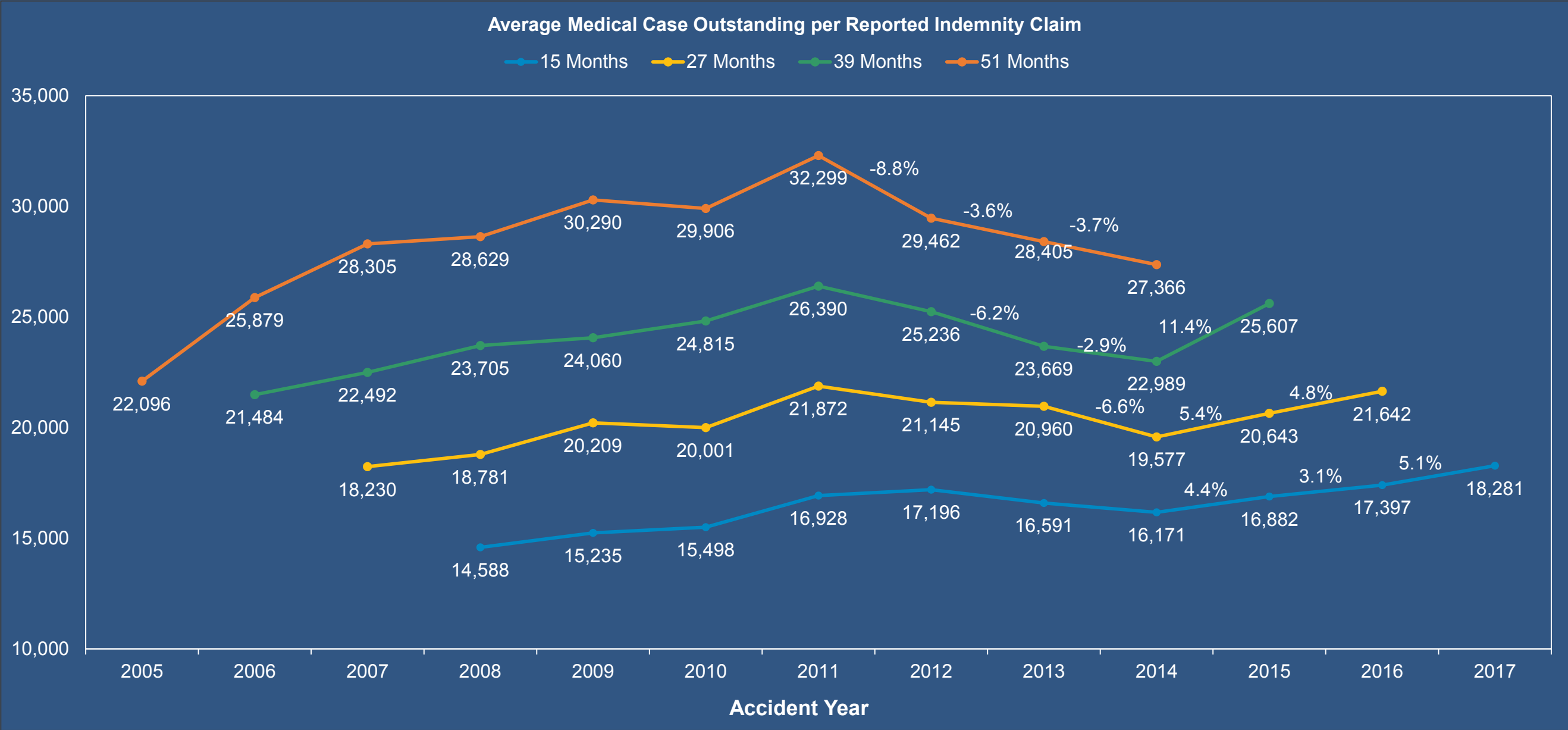
Severity – Paid Medical per Indemnity Claim (Exhibit S4.2)



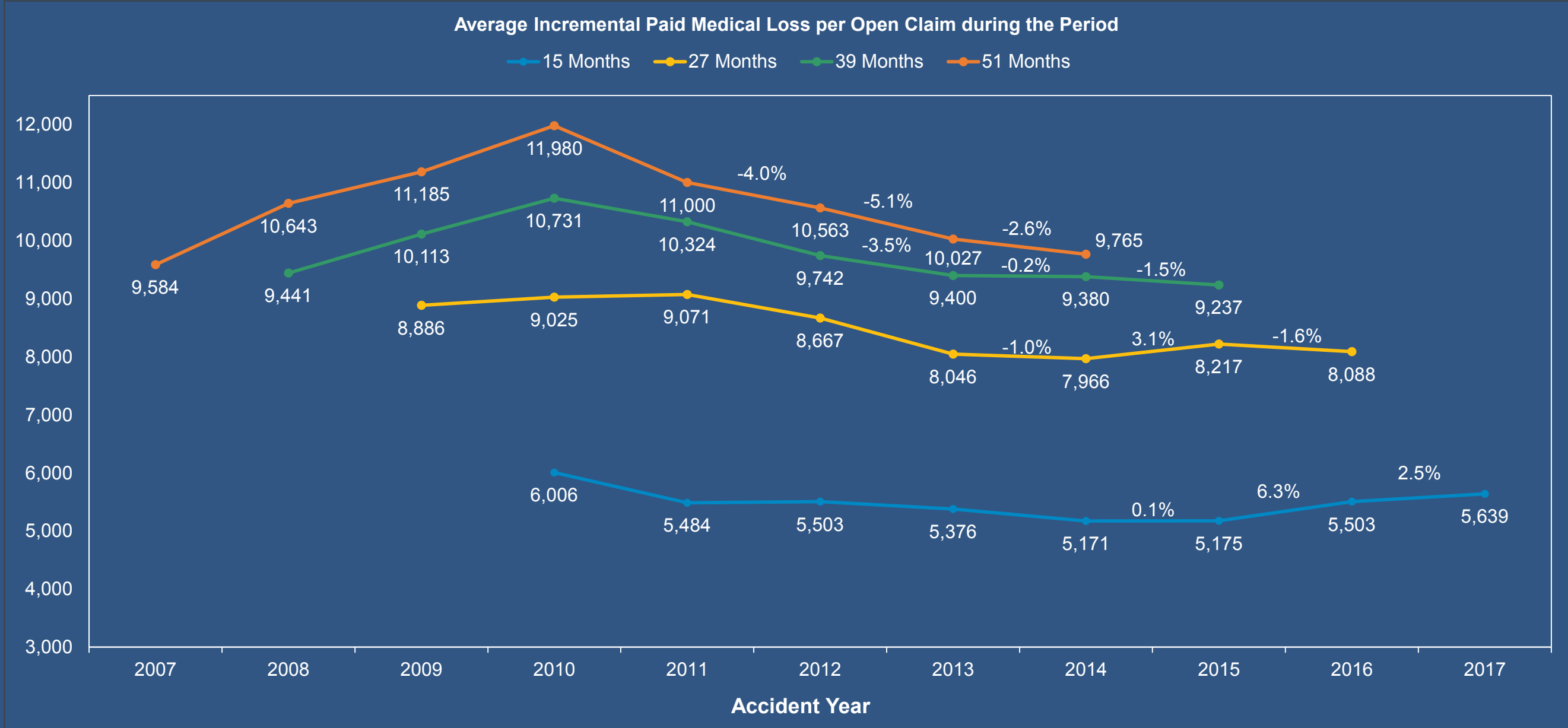
Severity – Indemnity Case Outstanding per Open Indemnity Claim (Exhibit S3.1)



Severity – Medical Case Outstanding per Open Indemnity Claim (Exhibit S3.2)



Severity – Incremental Paid Medical per Open Claim During the Period (Exhibit S6.2)



02

Earthquake Study



2017 Earthquake Study

- RMS Completed Study of Statewide WC Exposure Based on Updated RMS Earthquake Model & WCIRB Database of Exposure by Location
- Key Study Findings Presented at December 6, 2017 Meeting
 - Average annual estimated insured loss: \$29 million and 0.005% of total insured payroll
 - 1 in 100 year insured loss estimated at \$300 mm.; if assumed to occur during peak hours estimated at \$1.5 billion
- Committee Recommends Consideration of Provision for Expected Earthquake Losses in Advisory Pure Premium Rates
- CDI Rejected Earthquake Loading in Decision on 2004 Pure Premium Rate Filing
 - Concern over magnitude of model estimate (1.8%) of pure premium rates given lack of historical workers' compensation earthquake losses
 - Concern over lack of mechanism to create fund to pay losses if major earthquake was to occur
- Subsequent Considerations
 - Earthquake modeling refinements have significantly moderated estimates from 2002/2003 estimates
 - WCIRB has subsequently developed a refined model of statewide exposures by location
 - Virtually all other jurisdictions include catastrophe loads in loss costs

03

Study of Case Reserve- Adjusted Loss Development Methodology



Overview of Case Reserve-Adjusted Method

- Based on Berquist-Sherman approach for adjusting for changes in case reserve adequacy
- Begins with review of trends in average case reserves per open claim compared to average paid per closed claim
- Adjustment approach:
 - Latest year of average case reserves assumed to be post-shift
 - Inflation factor selected based on average paid per closed claim
 - Latest average case reserves “deflated” to restate case reserve triangle
 - Adjusted case reserves added to reported paid losses to compute adjusted incurred development factors
- Additional components for WCIRB approach:
 - Severities are on-leveled since reforms can distort review of severities
 - On-level factors same for paid losses and case reserves and based on PPR filing factors
 - Adjustment only applied to earlier development periods (approx. 84 months)

Review of Methodology

- Concerns with current approach:
 - On-level factors applied to PP ratemaking not appropriate for this adjustment
 - Selection of number of years in trend analysis judgmental
 - Case reserve shifts can occur at much later ages in addition to earlier periods
- Staff's review of methodology focused on:
 - Data reviewed & used in approach
 - Severity trend assumption
 - Number of periods to apply adjustment

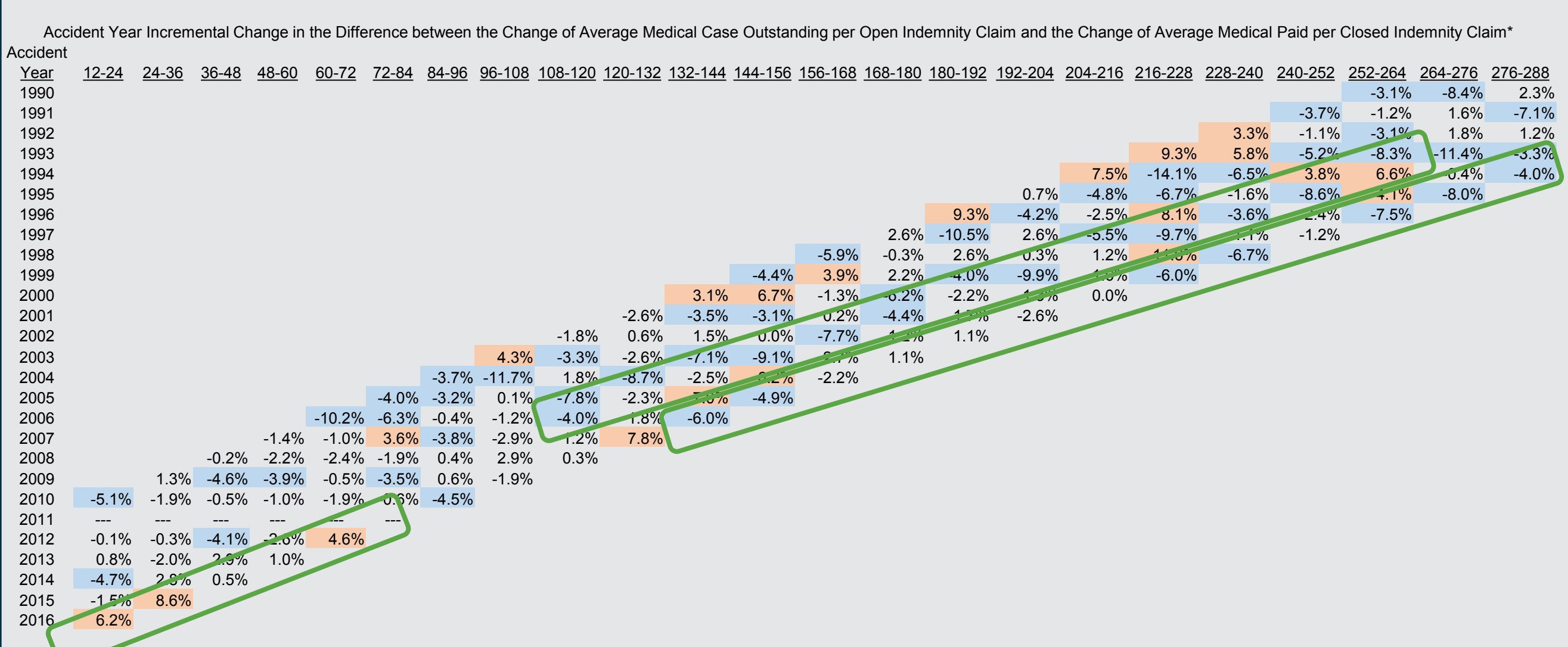
Comparison of Change in Medical Case Reserves per Open and Paid per Closed (Exhibit 3)

As of December 31, 2017

Comparison of Annual Change of Average Medical Case Outstanding per Open Indemnity Claim to Annual Change of Average Medical Paid per Closed Indemnity Claim*																			
Accident	Year	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	252	264	276
1990																	-9.9%	-13.0%	-21.4%
1991																-4.7%	-8.4%	-9.6%	-8.0%
1992															11.3%	14.6%	13.5%	10.4%	12.2%
1993														22.8%	32.0%	37.9%	32.7%	24.5%	13.1%
1994												-1.5%	6.1%	-8.1%	-14.6%	-10.7%	-4.2%	-4.5%	
1995											7.4%	8.1%	3.3%	-3.3%	-4.9%	-13.5%	-9.5%	-17.5%	
1996										-27.0%	-17.7%	-22.0%	-24.4%	-16.4%	-19.9%	-17.6%	-25.1%		
1997									-2.3%	0.3%	-10.2%	-7.6%	-13.1%	-22.8%	-21.7%	-22.9%			
1998								-6.5%	-12.4%	-12.7%	-10.2%	-9.9%	-8.7%	2.9%	-3.8%				
1999								-14.6%	-19.0%	-15.0%	-12.8%	-16.8%	-26.7%	-28.3%	-34.3%				
2000							-21.6%	-18.5%	-11.8%	-13.1%	-19.4%	-21.6%	-20.2%	-20.3%					
2001					-8.0%	-10.6%	-14.1%	-17.2%	-16.9%	-21.4%	-19.7%	-22.3%							
2002				-10.0%	-11.7%	-11.2%	-9.7%	-9.7%	-17.4%	-16.1%	-15.1%								
2003			15.7%	20.0%	16.8%	14.2%	7.1%	-2.0%	0.7%	1.8%									
2004		28.1%	24.3%	12.6%	14.4%	5.6%	3.2%	9.3%	7.2%										
2005	10.8%	6.8%	3.7%	3.7%	-4.1%	-6.4%	0.6%	-4.3%											
2006	-2.0%	-8.3%	-8.7%	-9.9%	-13.9%	-12.1%	-18.2%												
2007	-4.9%	-1.3%	-5.1%	-8.0%	-6.9%	0.9%													
2008	-10.8%	-12.7%	-12.3%	-9.4%	-9.1%														
2009	-8.9%	-12.5%	-11.9%	-13.8%															
2010	-9.0%	-9.6%	-14.0%																

Comparison of Change in Medical Case Reserves per Open and Paid per Closed (Exhibit 4)

As of December 31, 2017



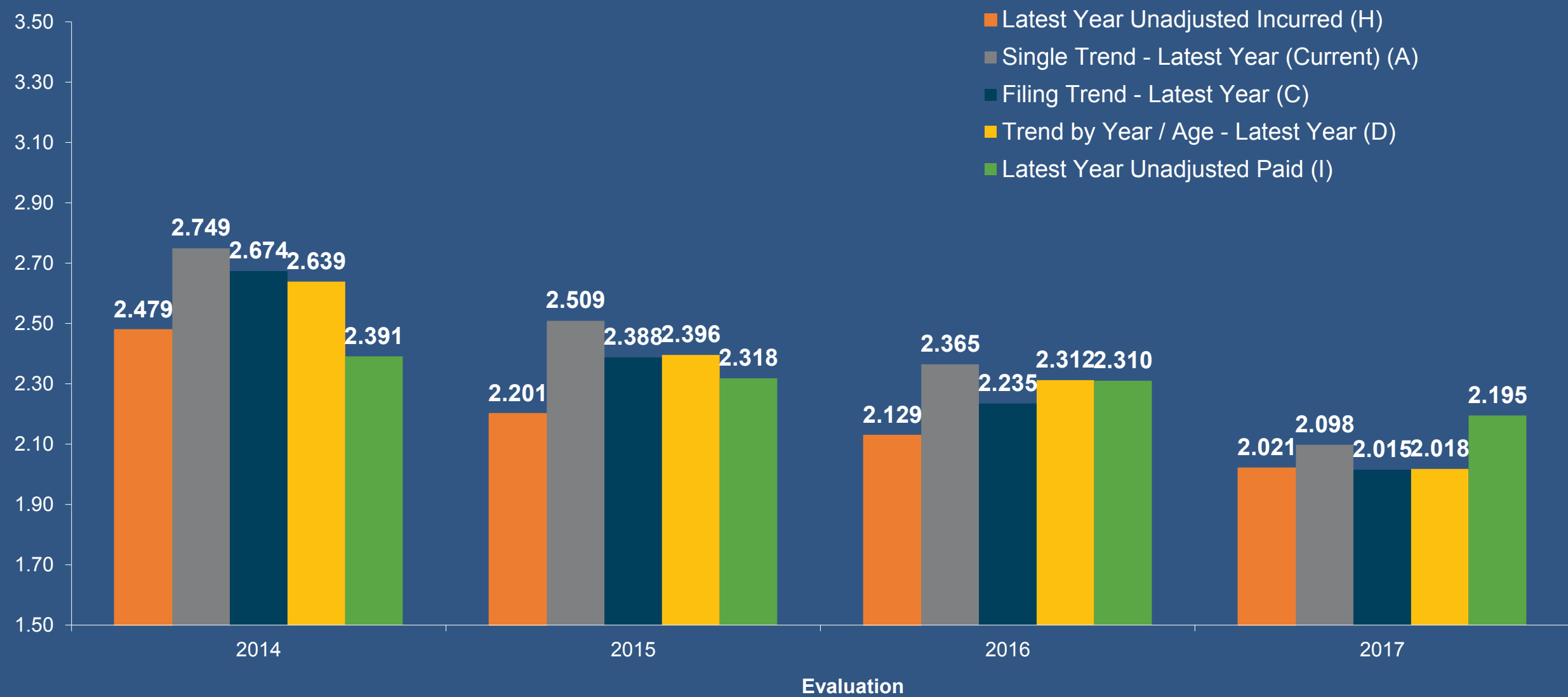
Review of Inflation Assumption

- Current approach:
 - Based on on-level average paid per closed indemnity claim
 - 6-year exponential trend applied to each maturity
 - Selected trend = Single trend rate based on average across six maturities
- Alternative approaches:
 - A & B - Current approach (latest year & 3-year average factors)
 - C - Single trend based on latest PPR filing selections
 - D & E - Trend applied to each AY & age based on paid per closed triangle (latest year & 3-year average)
 - F & G - Trend applied to each age based on 6-year exponential (latest year & 3-year average)
- Methods C, D & E do not require on-leveling
- Retrospective testing difficult due to data availability, reforms, and gradual nature of case reserve shifts
- Methods compared to unadjusted latest year incurred development and paid development (adjusted to an incurred basis)

Review of Inflation Assumption

Projected 12-to-84 Month Medical Incurred Development Factors (Exhibit 6.2 Updated)

As of December 31, 2017



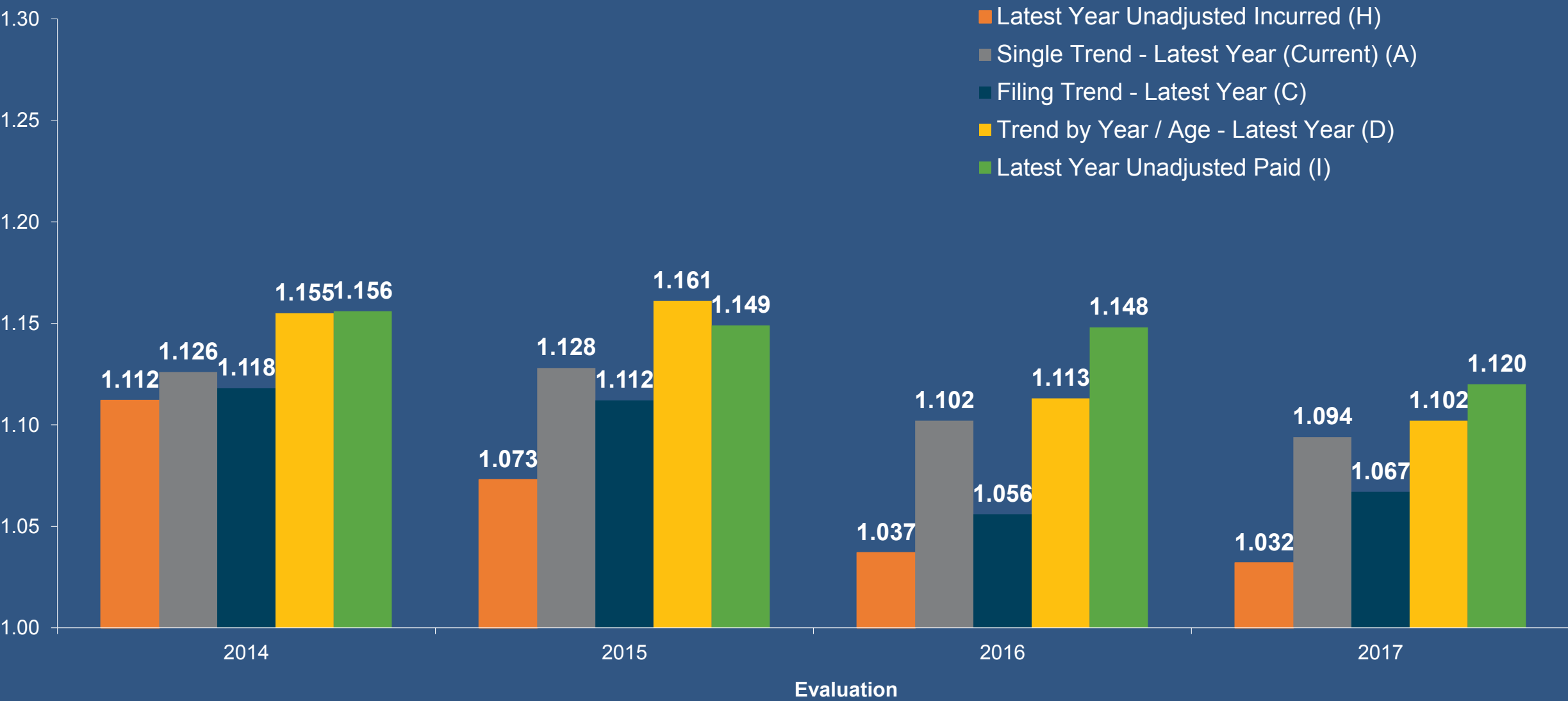
Review of Number of Periods Adjusted

- Current adjustment applied to incurred development through approx. 84 months
- Significant shifts in average case reserve levels occur after 84 months
- Staff reviewed adjustment applied to all available periods
- Changes at later ages can be volatile due to fewer claims open at these maturities

Review of Inflation Assumption

Projected 84-to-156 Month Medical Incurred Development Factors (Exhibit 6.2 Updated)

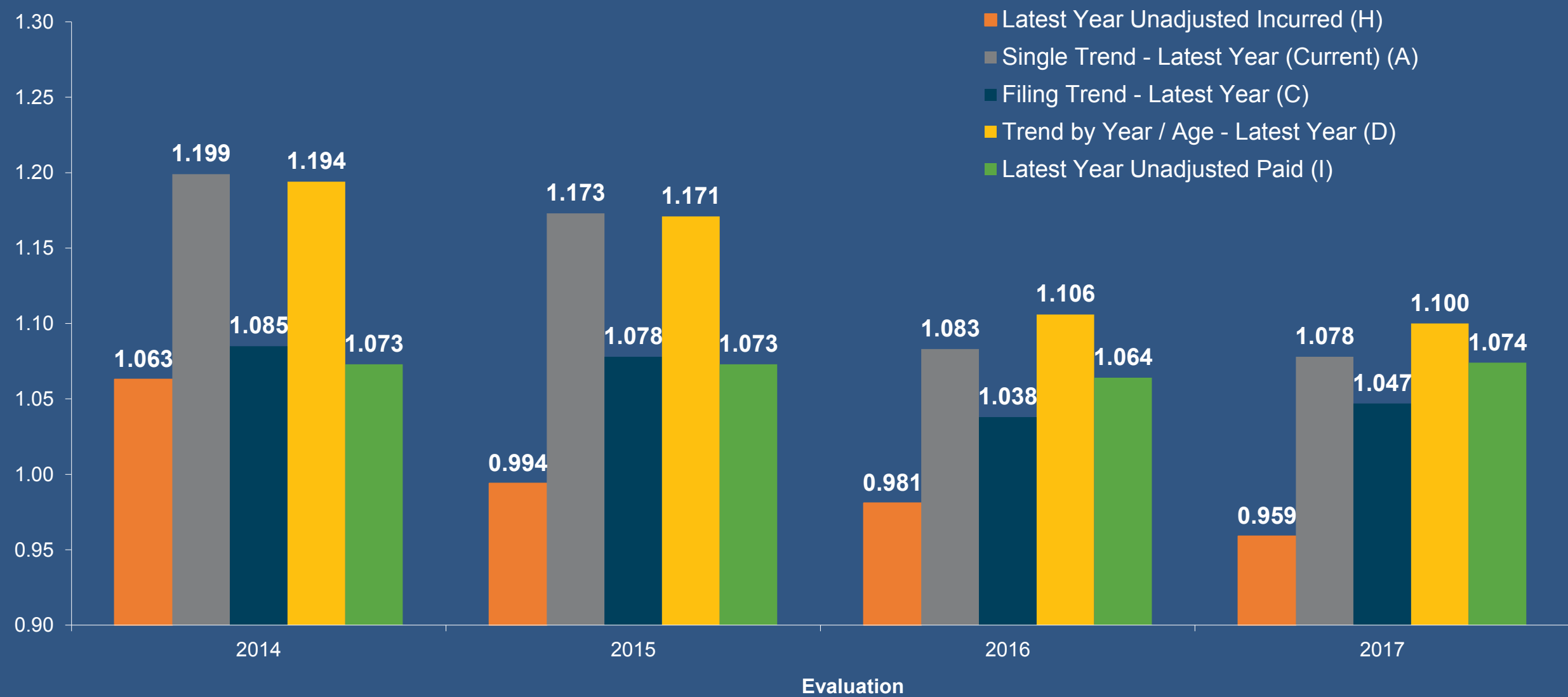
As of December 31, 2017



Review of Inflation Assumption

Projected 156-to-288 Month Medical Incurred Development Factors (Exhibit 6.2 Updated)

As of December 31, 2017



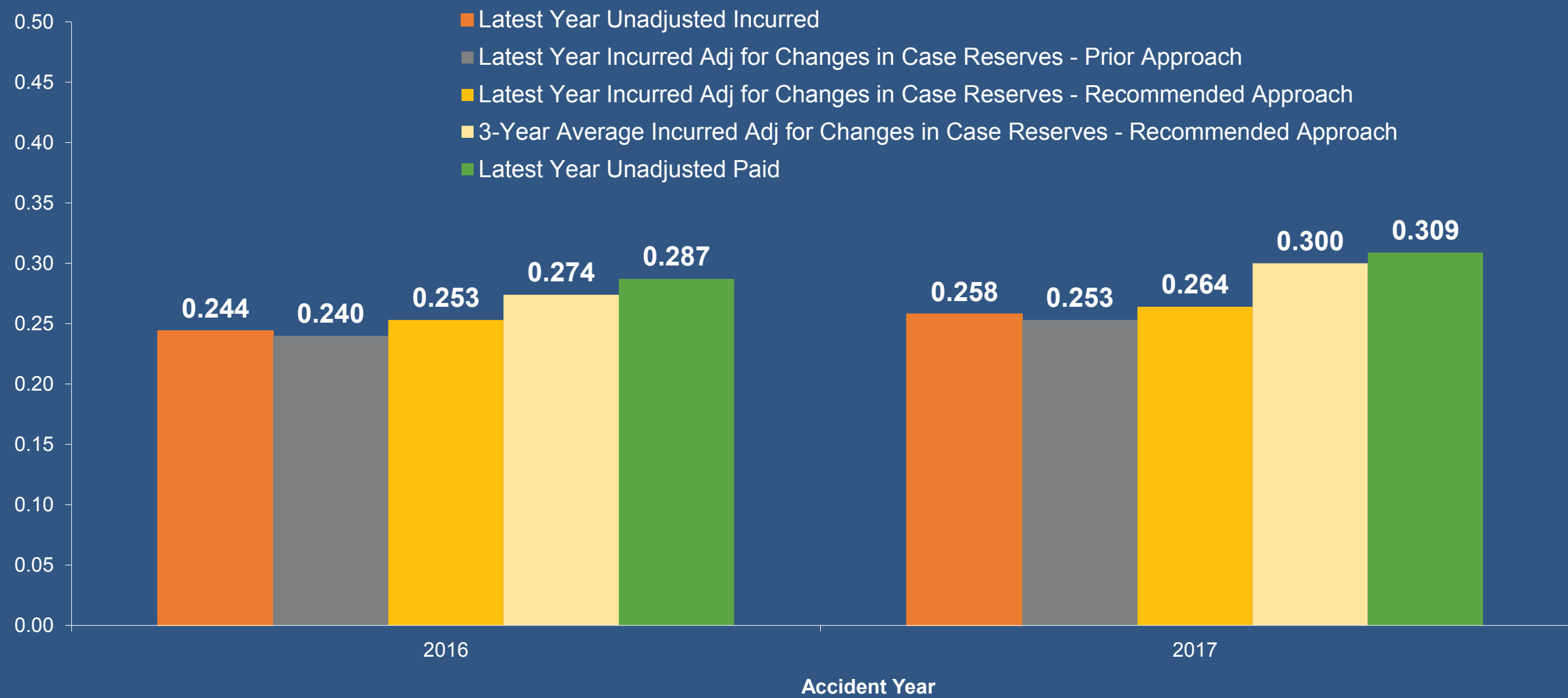
Summary of Recommendations to Case Reserve-Adjusted Method

- Use paid losses per closed indemnity claim for both indemnity and medical to adjust case reserves
- Review incremental changes in average case reserves and paid per closed in addition to AY changes
- “Deflate” average case reserves based on actual changes at AY & age in paid per closed claim
 - Does not require on-leveling of severities (reform impacts cancel out)
 - Does not require judgmental assumptions of number of years to apply
 - More appropriately adjusts for case reserve shifts in most periods
- Apply adjustment to incurred development through 156 months
- Continue to review latest year and 3-year average approaches
 - Adjustment should correct for some of the lack of responsiveness in a 3-year average
 - 3-year average approach should reduce volatility

Impact of Recommended Changes to Case Reserve-Adjusted Method

Projected Ultimate Medical Loss Ratios

As of March 31, 2018



04

Reform Adjustments to Loss Development



SB 863 Adjustments to Loss Development

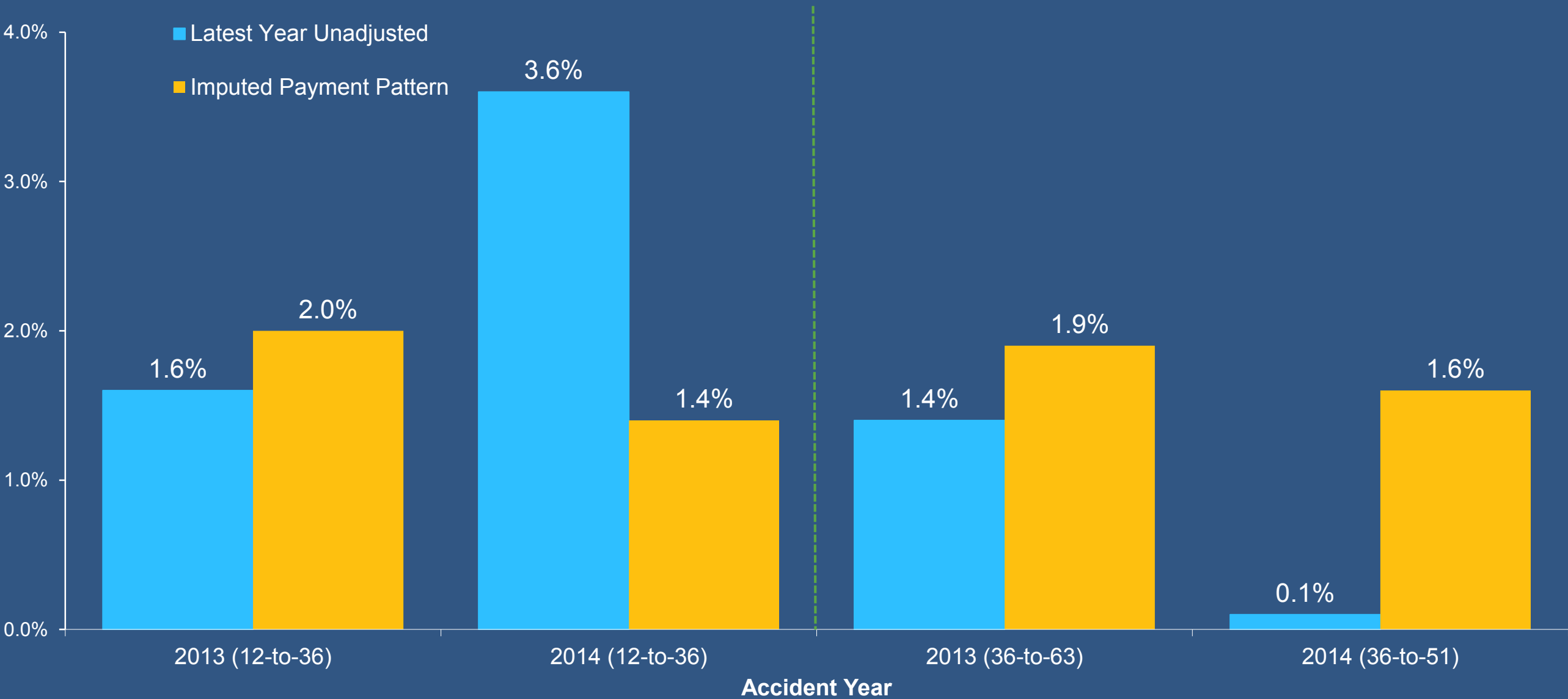
- Adjustments to historical development for impact of reforms based on August 2013 WCIRB report
 - SB 863 adjustment applied beginning with 1/1/2013 Filing
 - Resource-based relative value scale (RBRVS) adjustments applied beginning with 1/1/2015 Filing
- Prior Committee reviews found that they continued to be appropriate
- Previous review conducted in August 2016
- Updated based on emerging SB 863 Cost Monitoring information

SB 863 Adjustments to Loss Development – Indemnity

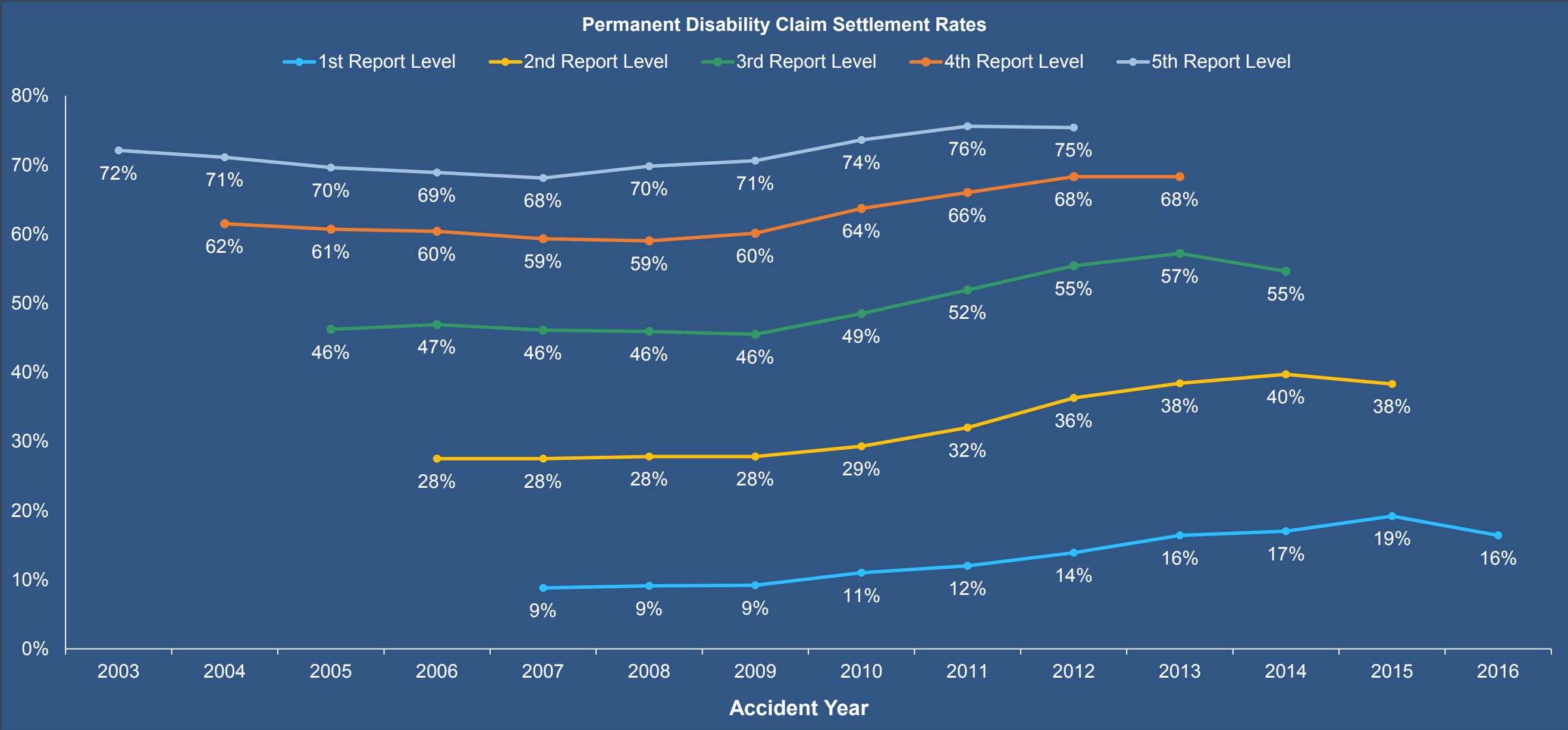
- 2013 Report: Pre-SB 863 indemnity payment patterns imputed after adjusting for SB 863 changes by benefit type
 - Adjusts for expected longer PD duration and increased PD benefits (PD late paying benefit)
- Difference between pre-SB 863 pattern and imputed pattern applied to cumulative indemnity LDFs
- Prior adjustments to loss development for AYs 2011 and 2012 discontinued beginning with 7/1/2017 Filing
- Current adjustments to cumulative indemnity LDFs
 - AY 2013 adjusted by +2% (PD min. & max.)
 - AY 2014 adjusted by +5% (PD max.)

Comparison of Absolute Difference from Actual Emergence on Indemnity Development (Exhibit 1)

As of March 31, 2018



Permanent Disability Claim Settlement Rates



SB 863 Adjustments to Loss Development – Indemnity

Summary and Recommendations

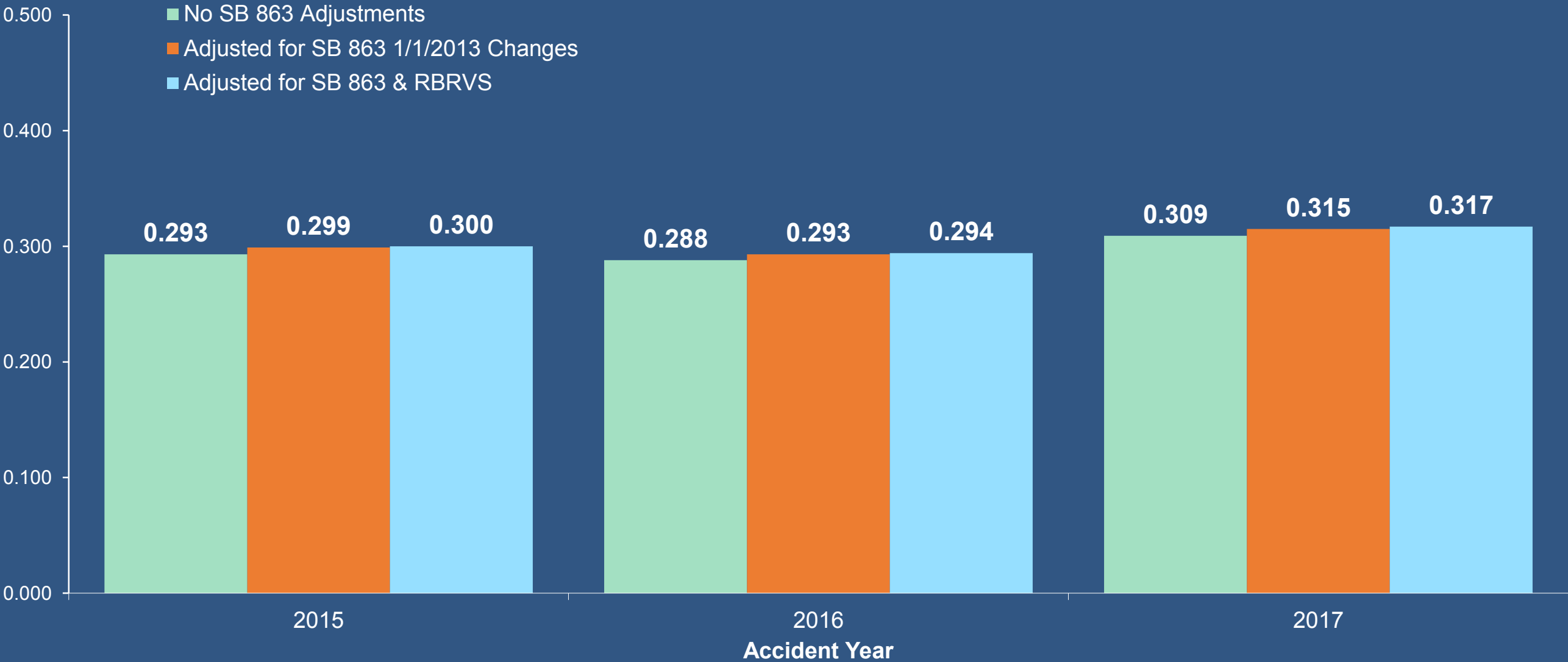
- The adjusted development factors are generally less accurate than the unadjusted in recent years
- Permanent disability claims are settling faster
- Higher PD benefits offset by claims closing faster
 - Reduces long-term claim growth
- Recent decreases observed in paid indemnity development
- Staff recommends no longer applying these adjustments to paid indemnity development

SB 863 Adjustments to Loss Development – Medical

- 2013 Report: Pre-SB 863 payments in age-to-age factors restated at post-SB 863 level
 - Effectively “on-levels” historical payments to be on a consistent basis
 - If no adjustment made, factors would include mix of pre- and post-SB 863 payments and may be distorted
 - Adjustments applied to loss ratios to adjust reported losses and development to adjust future expected losses
- Current adjustments to medical payments
 - Pre-1/1/2013: -4.2% (liens, ASCs, surgical hardware, MPNs)
 - Pre-1/1/2014: -2.1% (RBRVS year 1)
 - Pre-1/1/2015: -1.7% (RBRVS year 2)
- RBRVS year 3 and 4 changes (1/1/2016 and 1/1/2017) were modest and not showing distortion in paid medical development

Impact of Adjustments for SB 863 on Ultimate Medical Loss Ratios (Exhibit 3)

As of March 31, 2018

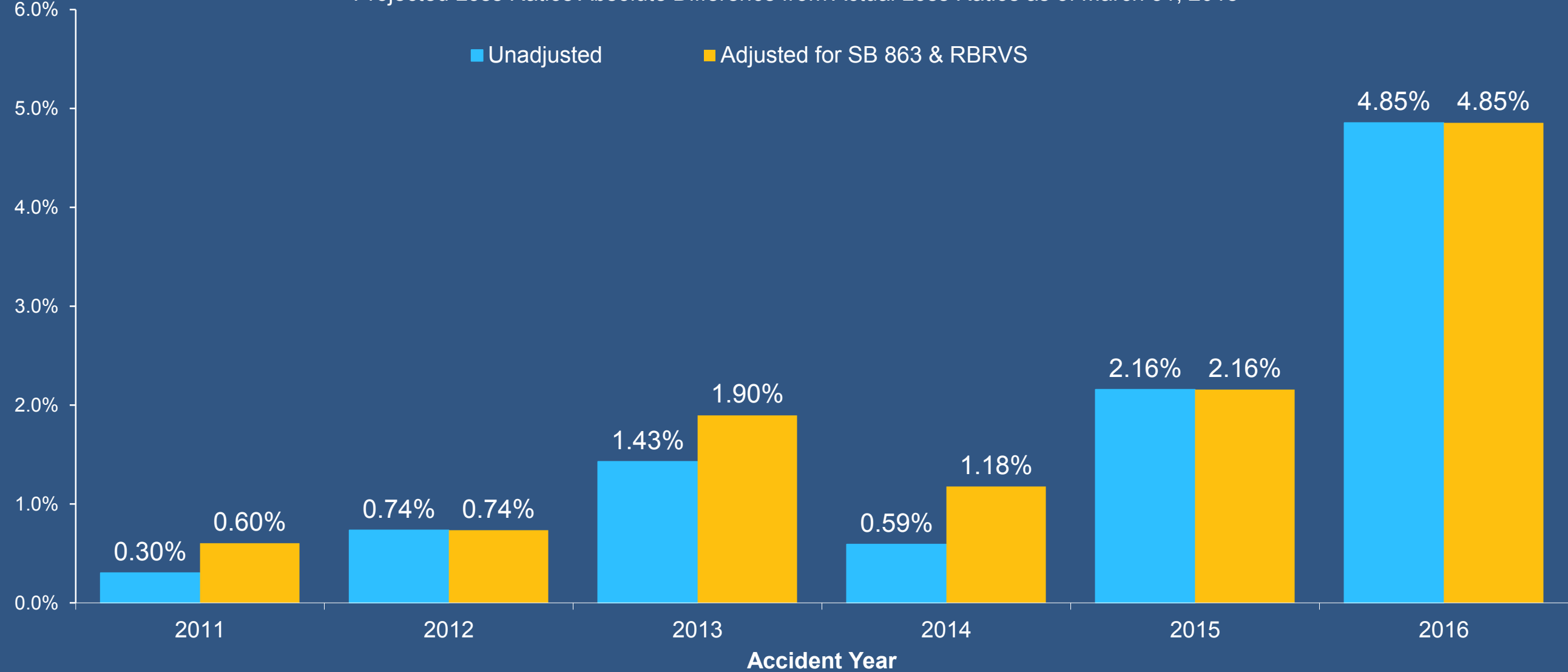


SB 863 Adjustments to Loss Development – Medical

- Reviewed overall impact of reform adjustments on ultimate medical loss ratios
 - Modest impact from SB 863 and RBRVS adjustments
- Compared accuracy of estimates based on reform adjusted and unadjusted paid loss ratios
 - Actual paid medical loss development based on March 31, 2018
 - Project loss ratios from March 31, 2017 to March 31, 2018 using unadjusted and adjusted age-to-age factors
 - [Developed March 2018 LR] = [Adj. 2017 Reported Paid LR] x [Adjusted LDF – 1] + [Unadj. 2017 Reported LR]

Retrospective Testing of Adjustments for SB 863 on Medical Loss Development (Exhibit 4)

Projected Loss Ratios Absolute Difference from Actual Loss Ratios as of March 31, 2018



SB 863 Adjustments to Loss Development – Medical

Summary and Recommendations

- SB 863 and RBRVS adjustments only modestly impact ultimate paid loss ratios
- Counterintuitive results in older periods
 - Downward adjustment to older accident year loss ratios not offset by expected increases in upward paid medical development
- Recent adjustments do not significantly improve the accuracy of the loss ratio projection
- Likely significant downward impact of IMR, liens, etc. on medical loss development tail not reflected
- Sharply reduced pharmaceutical costs impacting recent medical development
- Staff recommends to no longer apply these adjustments to paid medical loss development

Adjustments to On-Leveling for SB 863

- No changes needed for indemnity benefits if loss development adjustments removed
- Medical adjustments needed to on-leveling for SB 863
 - Adjustments for benefit changes previously addressed in development

Accident Year	Current Adj	Full SB 863 Adj. *
2013	0.0%	-4.2%
2014	0.4%	-3.1%
2015	0.1%	-0.1%
2016	0.1%	+0.1%
2017	0.1%	+0.1%

- SB 863 10% medical utilization adjustment also under review

*1/1/2013 SB 863 adjustment is only applied to accident year 2013. 1/1/2014 RBRVS adjustment spread between accident years 2014 through 2017.

05

3/31/2018
Experience –
Review of
Methodologies



Updated Summary of March 31, 2018 Experience

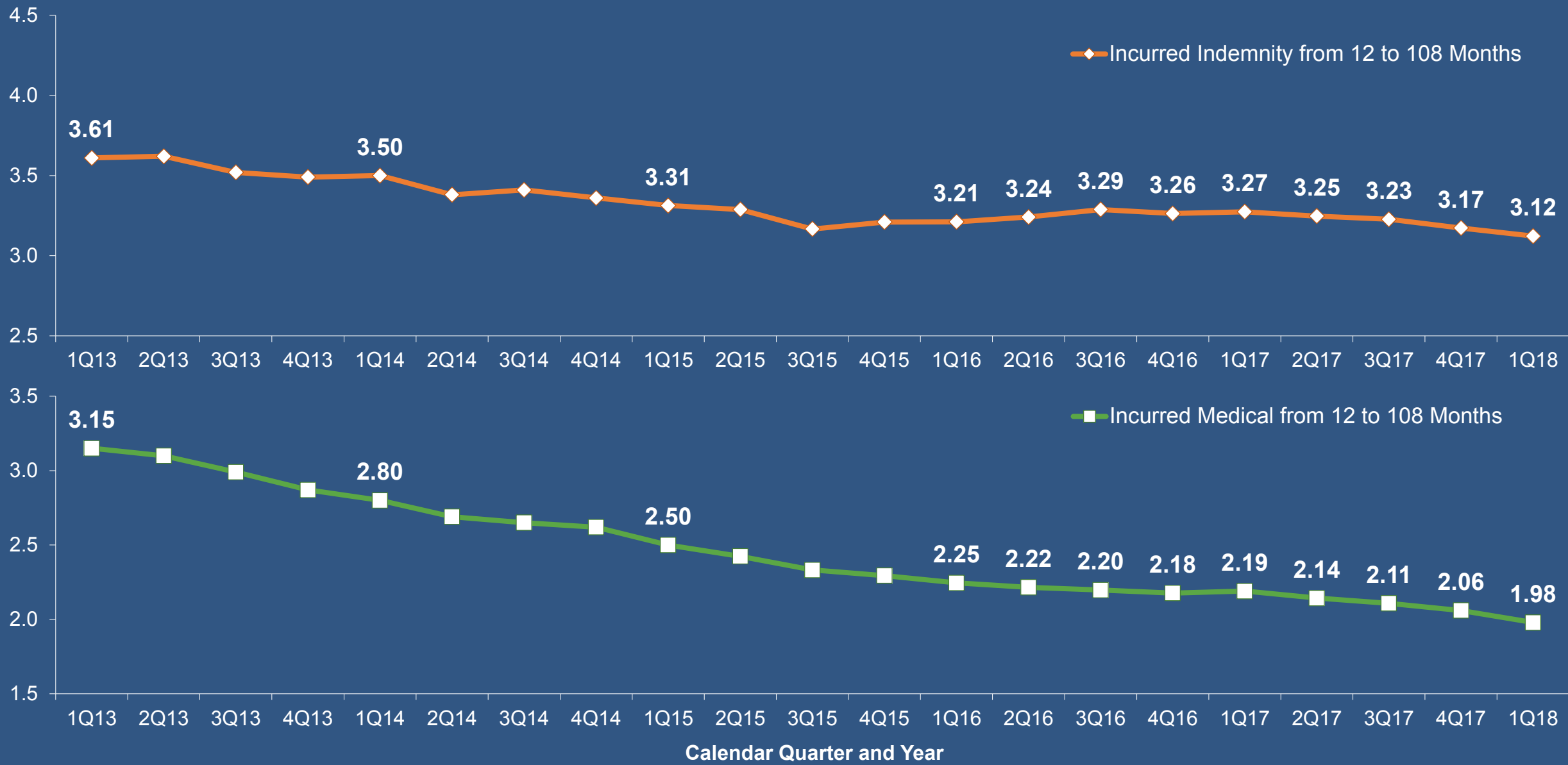
- Almost 100% of market reflected
- Same methodologies as in 7/1/18 Filing and 6/15/18 Agenda
 - Latest year paid loss development adjusted for SB 863 & SB 1160 and changes in claim settlement rates
 - Incurred loss development applied after 231 months
 - Separate frequency and 0% indemnity severity & 3% medical severity trends
- Projected policy year 2019 loss ratio: 0.581
- ~2.5 point decrease from 7/1/18 Filing projection (0.608)
- 0.7 point increase from 6/15/18 Agenda (0.574) attributable to updated frequency forecasts

Approximate Percentage Point Change in Projected Loss Ratio

Item	Change from 7/1/18 Filing	Change from 6/15/18 Agenda
Loss Development Experience Change	-2.0	0.0
Updated Wage Forecasts	0.0	0.0
Updated Frequency Projections	+0.5	+0.7
Trend to Policy Year 2018	-1.0	0.0
Total	-2.5	+0.7

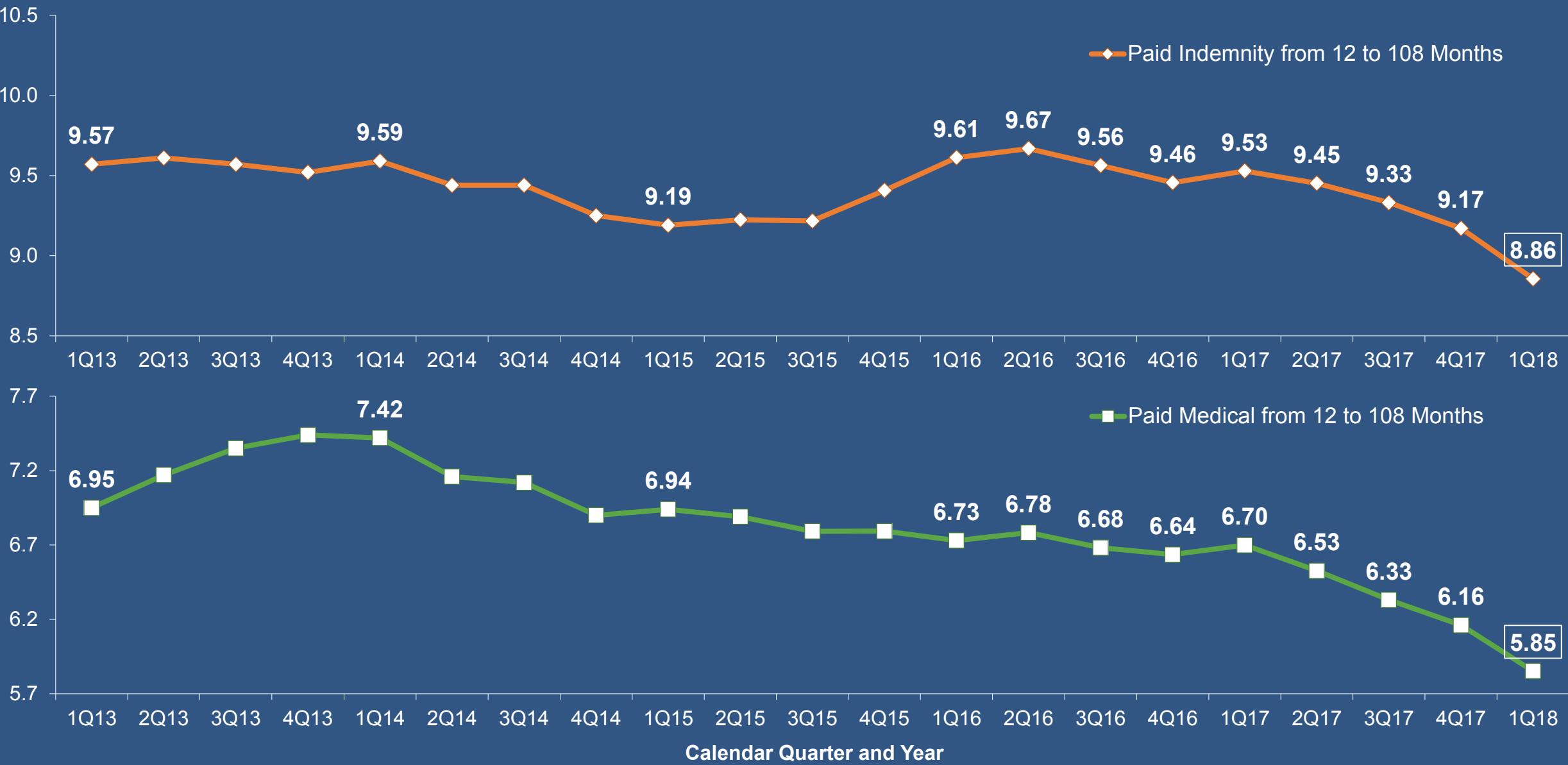
Cumulative Incurred Development from 12 to 108 Months

As of March 31, 2018



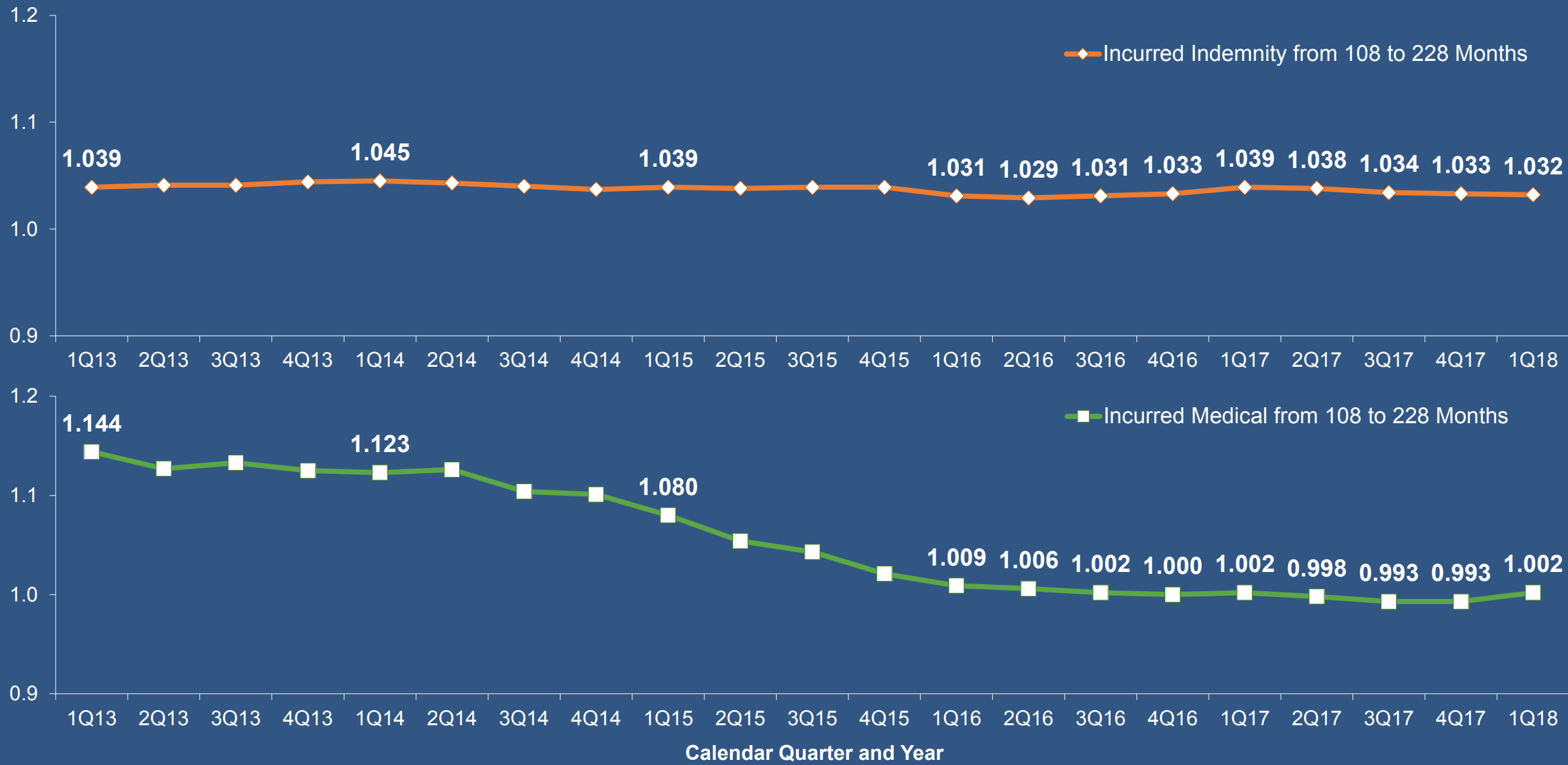
Cumulative Paid Development from 12 to 108 Months

As of March 31, 2018



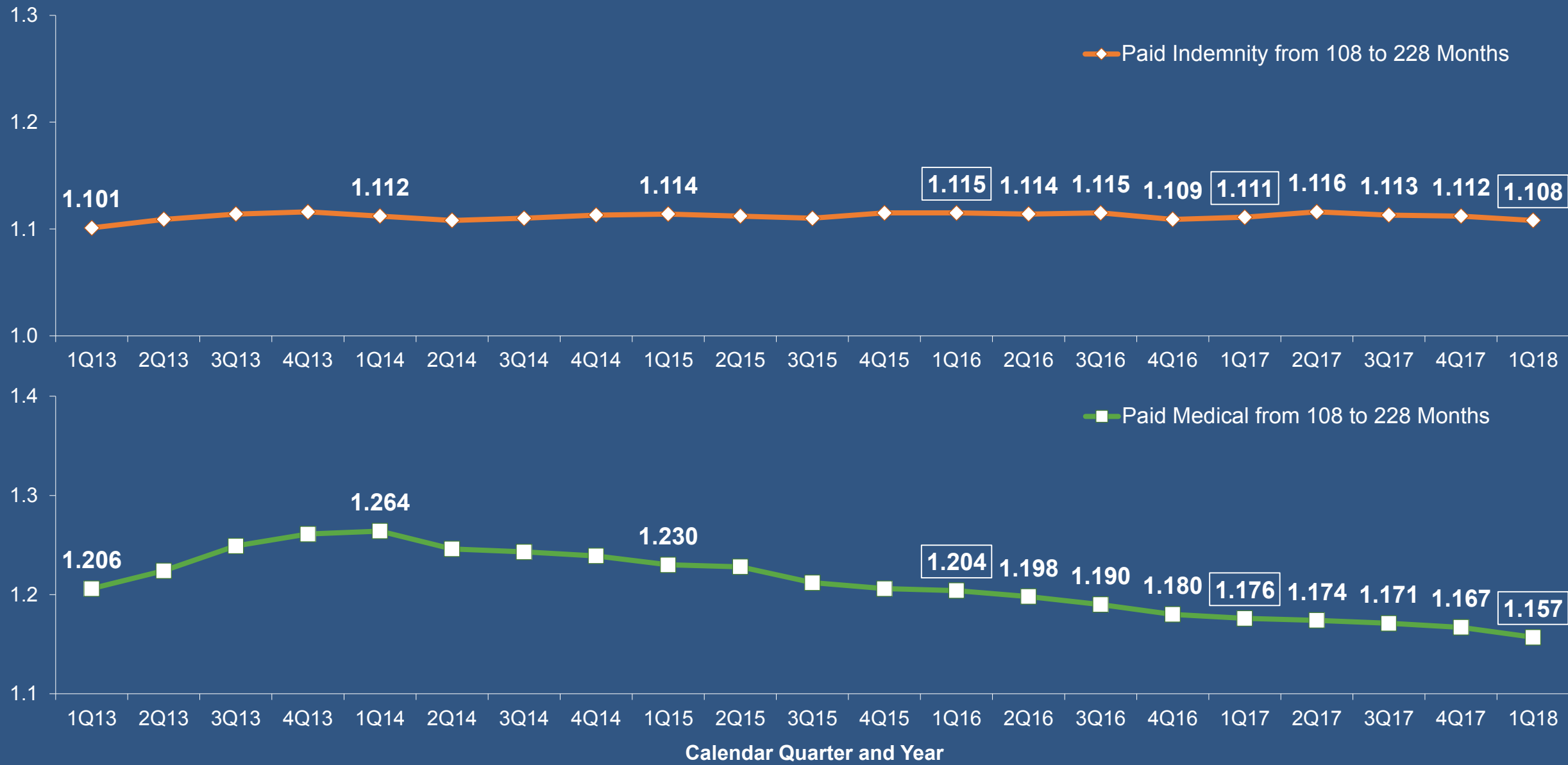
Cumulative Incurred Development from 108 to 228 Months

As of March 31, 2018



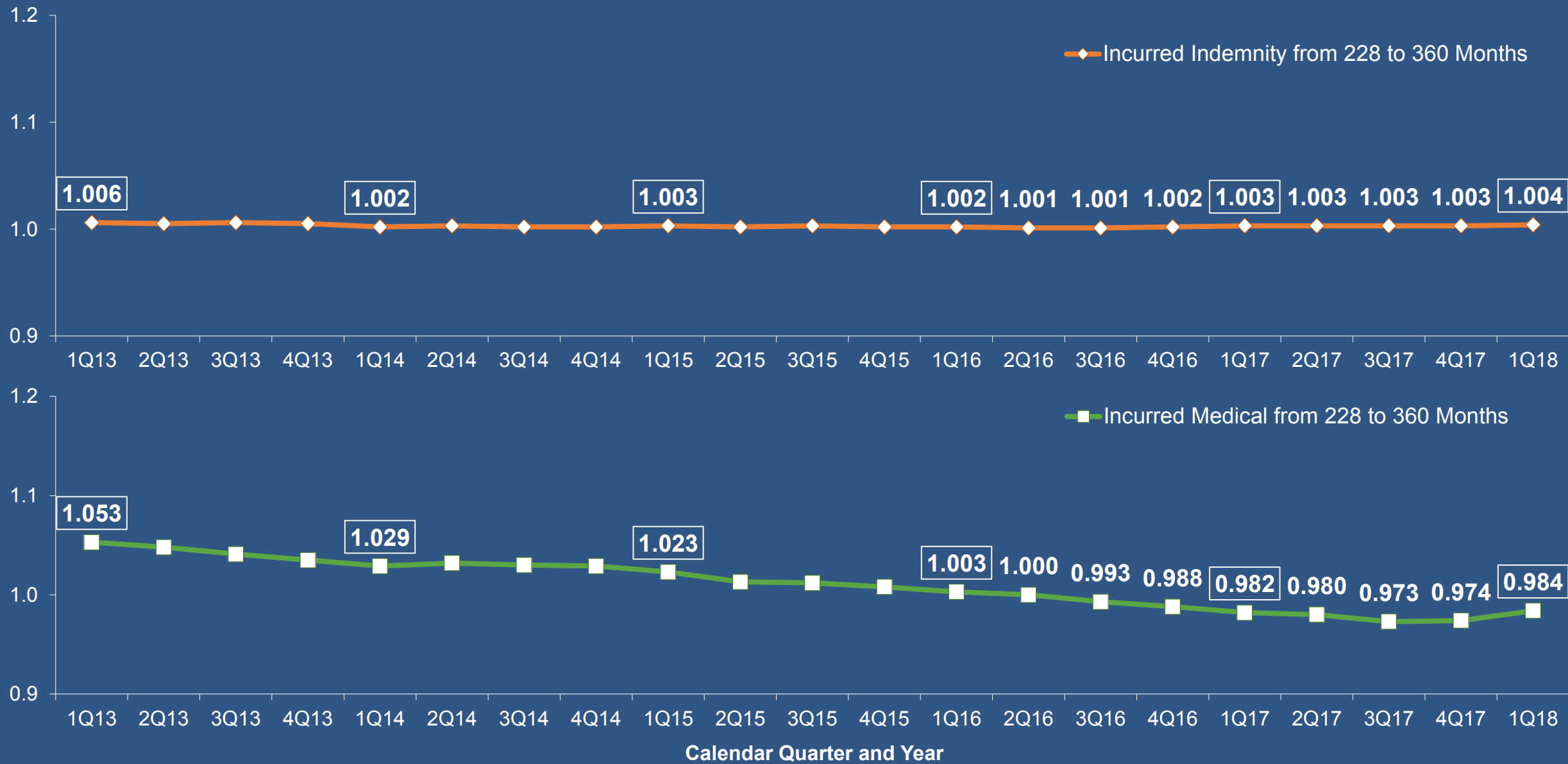
Cumulative Paid Development from 108 to 228 Months

As of March 31, 2018



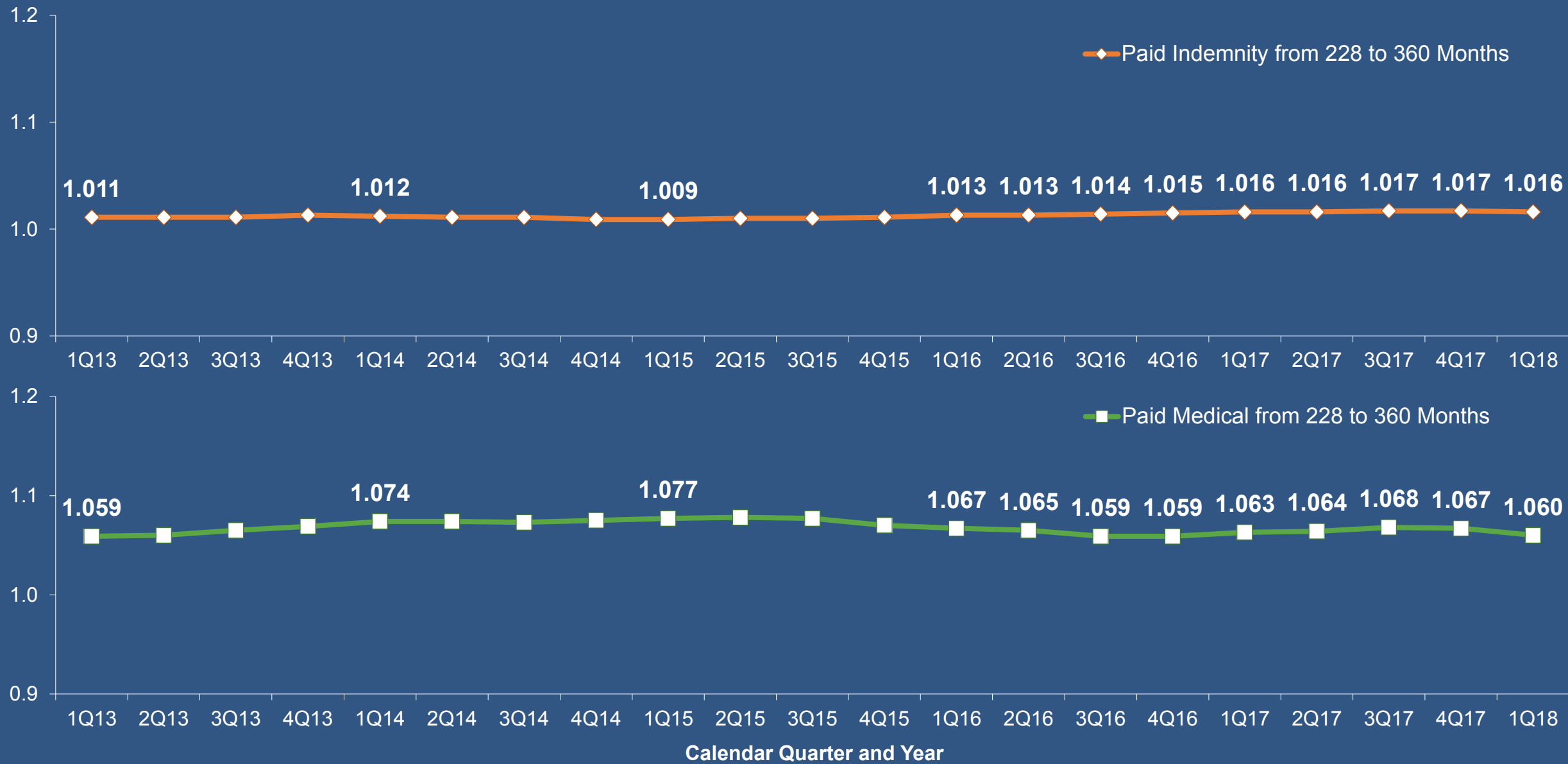
Cumulative Incurred Development from 228 to 360 Months

As of March 31, 2018



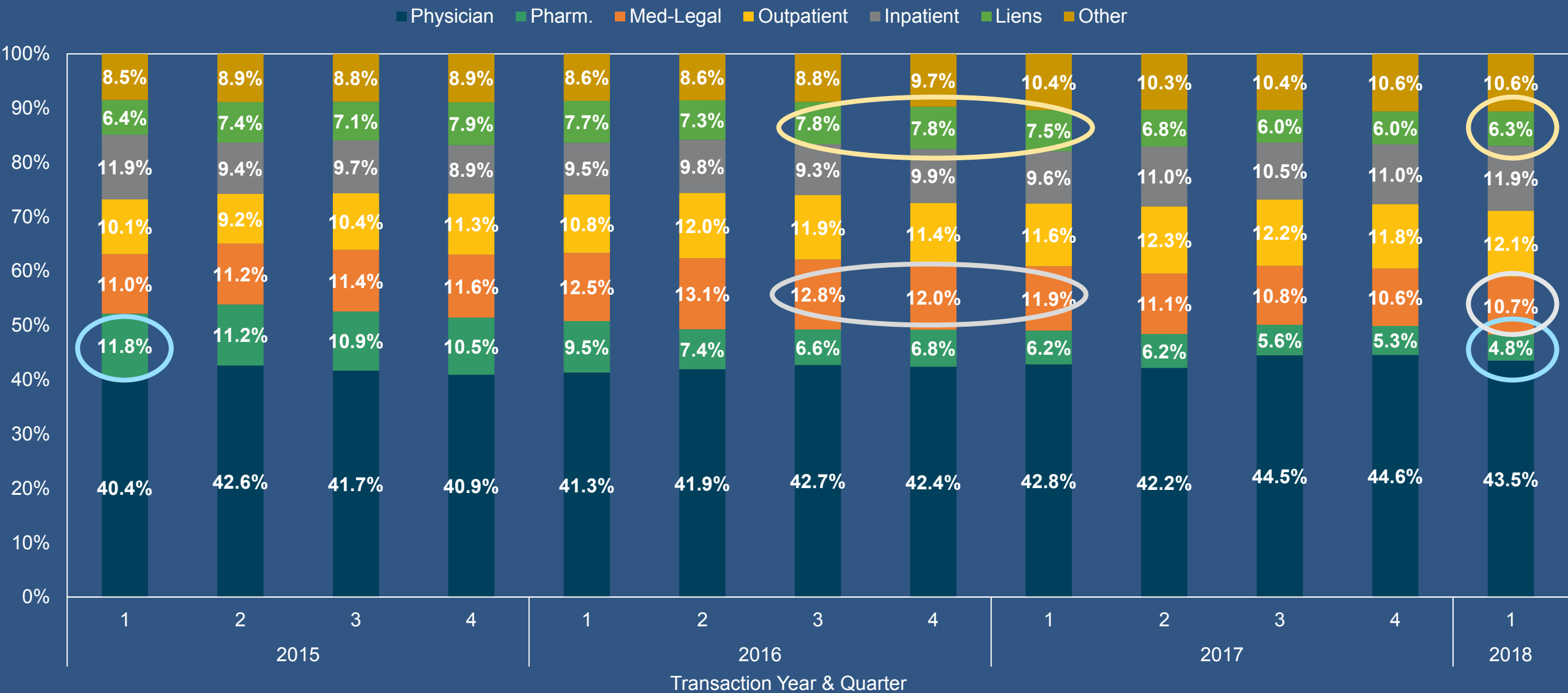
Cumulative Paid Development from 228 to 360 Months

As of March 31, 2018



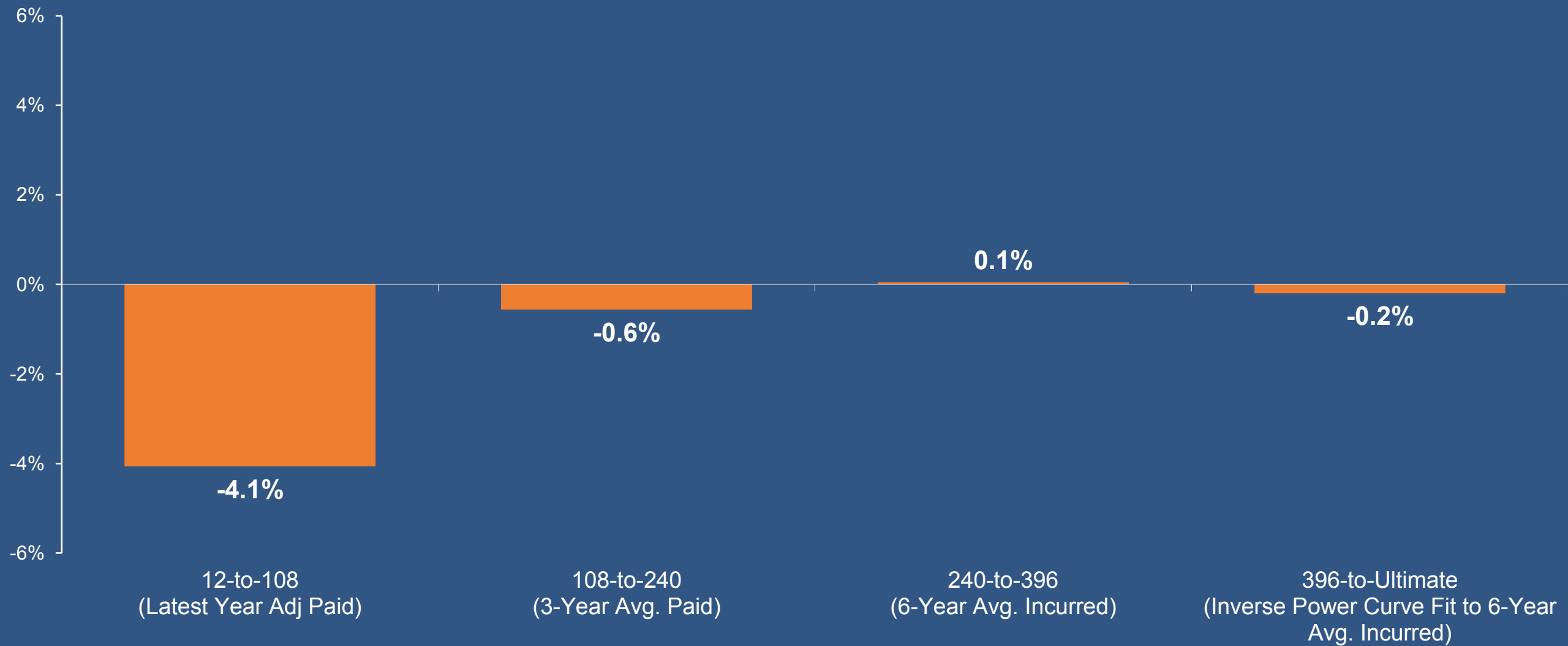
Proportion of Medical Paid by Category

As of March 31, 2018



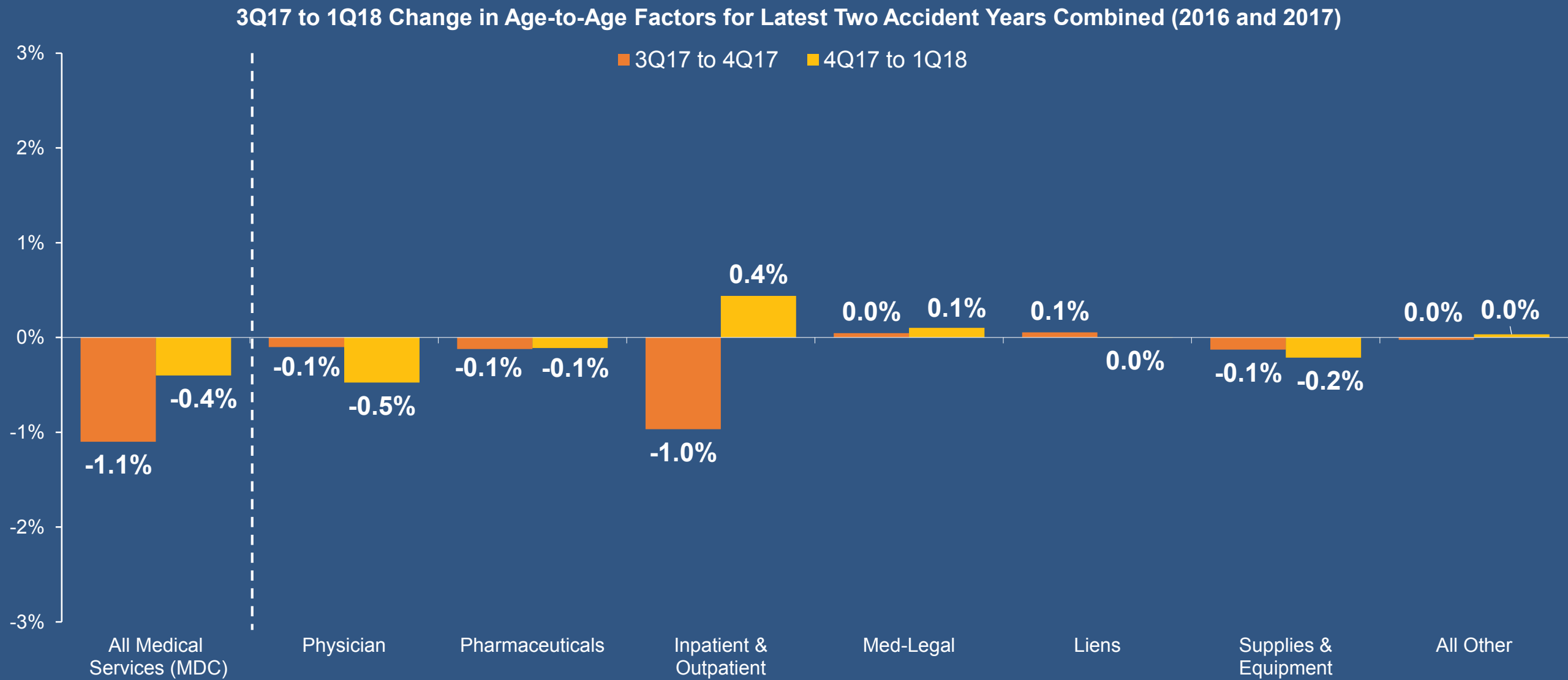
Change in Projected Medical Development Factor

12/31/17 to 3/31/18 Experience



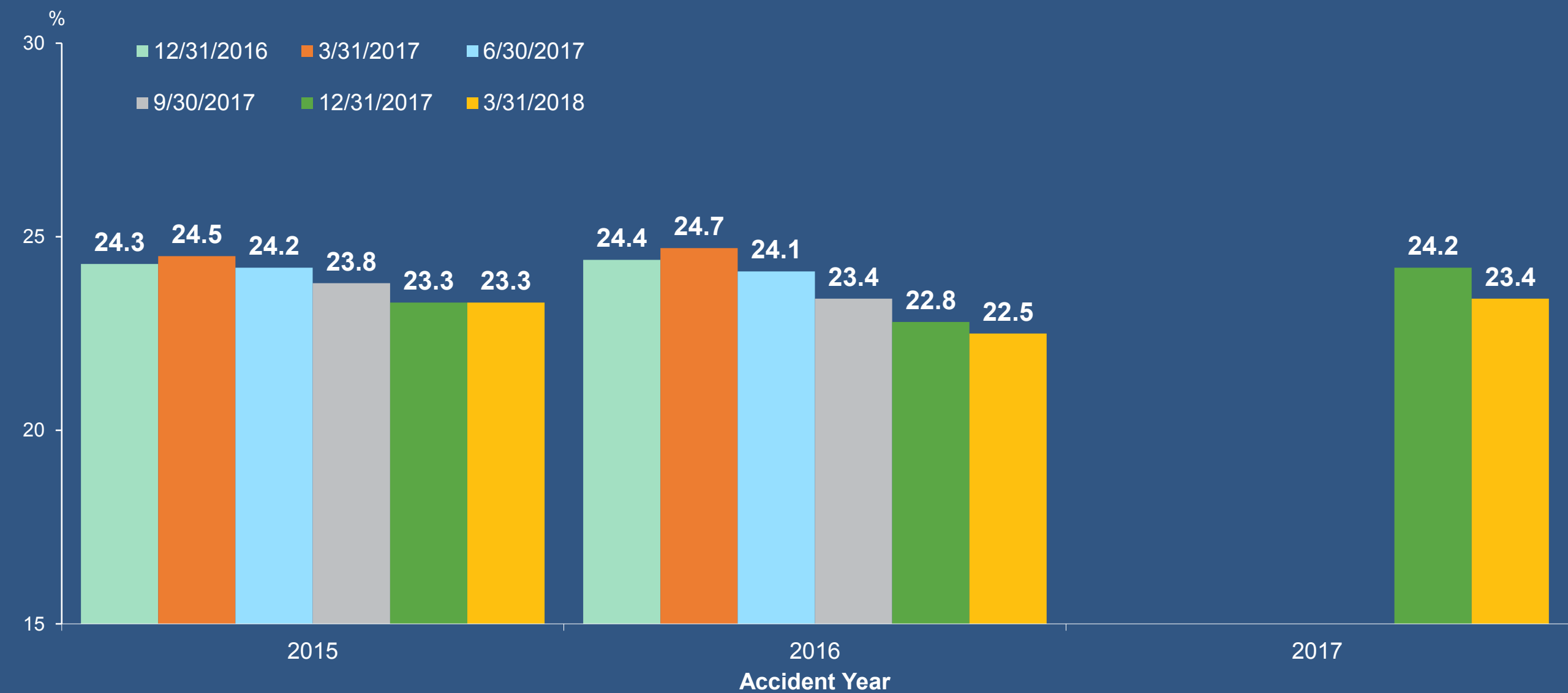
Change in Paid Medical Development Factors by Category

As of March 31, 2018



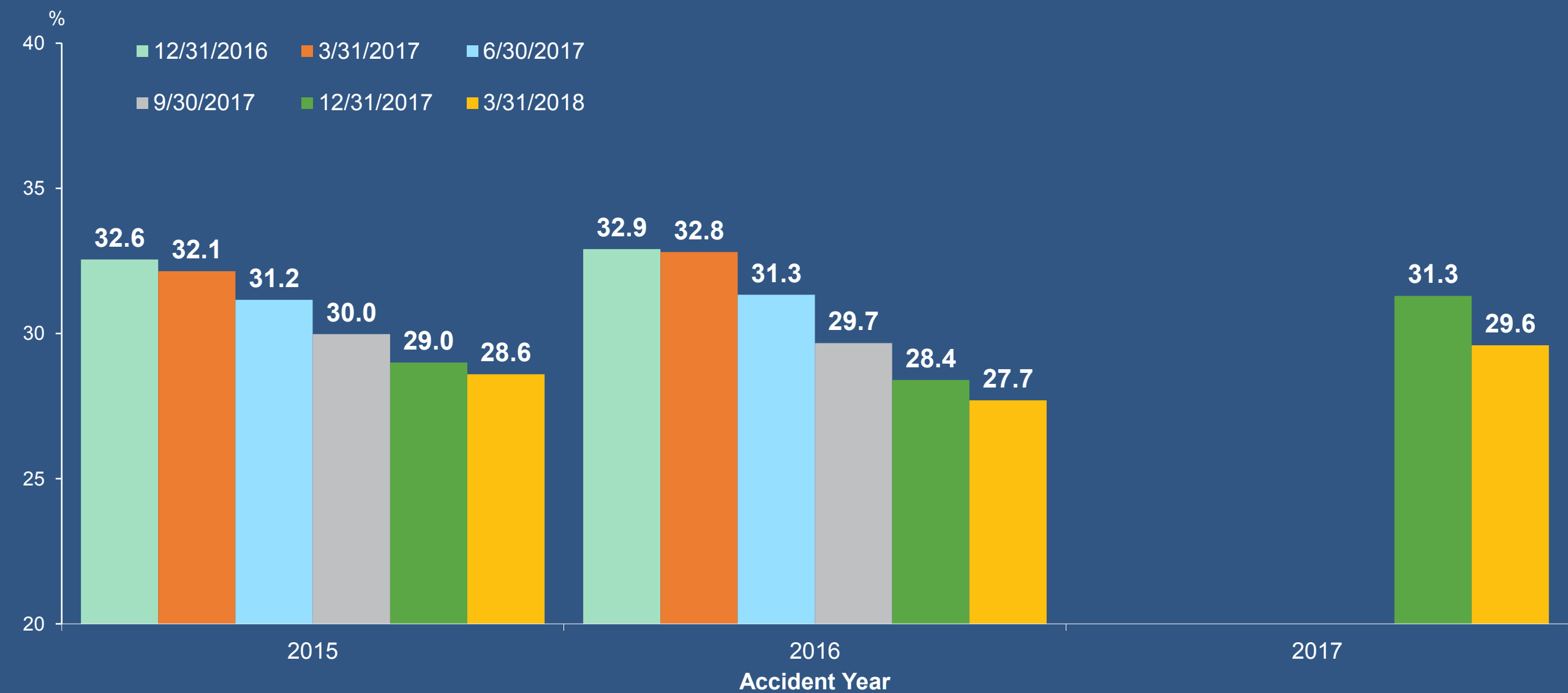
Projected Ultimate Indemnity Loss Ratios (Exhibit 3.1)

As of March 31, 2018



Projected Ultimate Medical Loss Ratios (Exhibit 3.2)

As of March 31, 2018



Alternative Loss Development Methodologies (Item AC18-08-03)

Incurred Methods

- Unadjusted Incurred Projections
 - Best with stable case reserve levels and incurred patterns
 - Can be distorted by changing reserve levels
 - Incurred development more volatile and cyclical than paid development
 - Performed poorly during transition periods
 - Greater variability across insurers than paid method
 - Difficult to impute reform adjustments
 - Treatment of MCCP in medical reserves unknown
 - Recent case reserve levels have significantly decreased

Alternative Loss Development Methodologies (Item AC18-08-03)

Incurred Methods

- Incurred Adjusted for Changes in Case Reserve Levels
 - Best with clear evidence of changing case reserve levels
 - Sensitive to severity & on-level adjustments to case reserves
 - Staff's recommended enhancements simplify approach and make it more responsive to shifting reserve levels
 - Unclear how to impute reform impacts
 - Current projection (with enhancements) above unadjusted incurred projection
- Insurer Mix-Adjusted Incurred
 - Best with clear evidence of shifting market shares impacting incurred patterns
 - Issues with lack of transparency and application of statewide method to individual insurer experience
 - Current projection consistent with unadjusted incurred projection

Alternative Loss Development Methodologies (Item AC18-08-03)

Paid Methods

- Unadjusted Paid Projections
 - Best with stable payment patterns
 - Can be distorted by changing settlement rates or reforms
 - Generally outperformed unadjusted incurred during transition periods
 - Less variability in paid patterns across insurers than in incurred patterns
 - Recent changes in paid development likely related to reforms, fraud, pharmaceutical savings, and claim settlement changes
- Reform-Adjusted Paid
 - Best with clear evidence of reform impact on payment patterns
 - SB 863 adjustments no longer improving accuracy of projections
 - SB 1160 adjustments reflect impact of liens on medical development patterns
 - Current projection above unadjusted paid projection

Alternative Loss Development Methodologies (Item AC18-08-03)

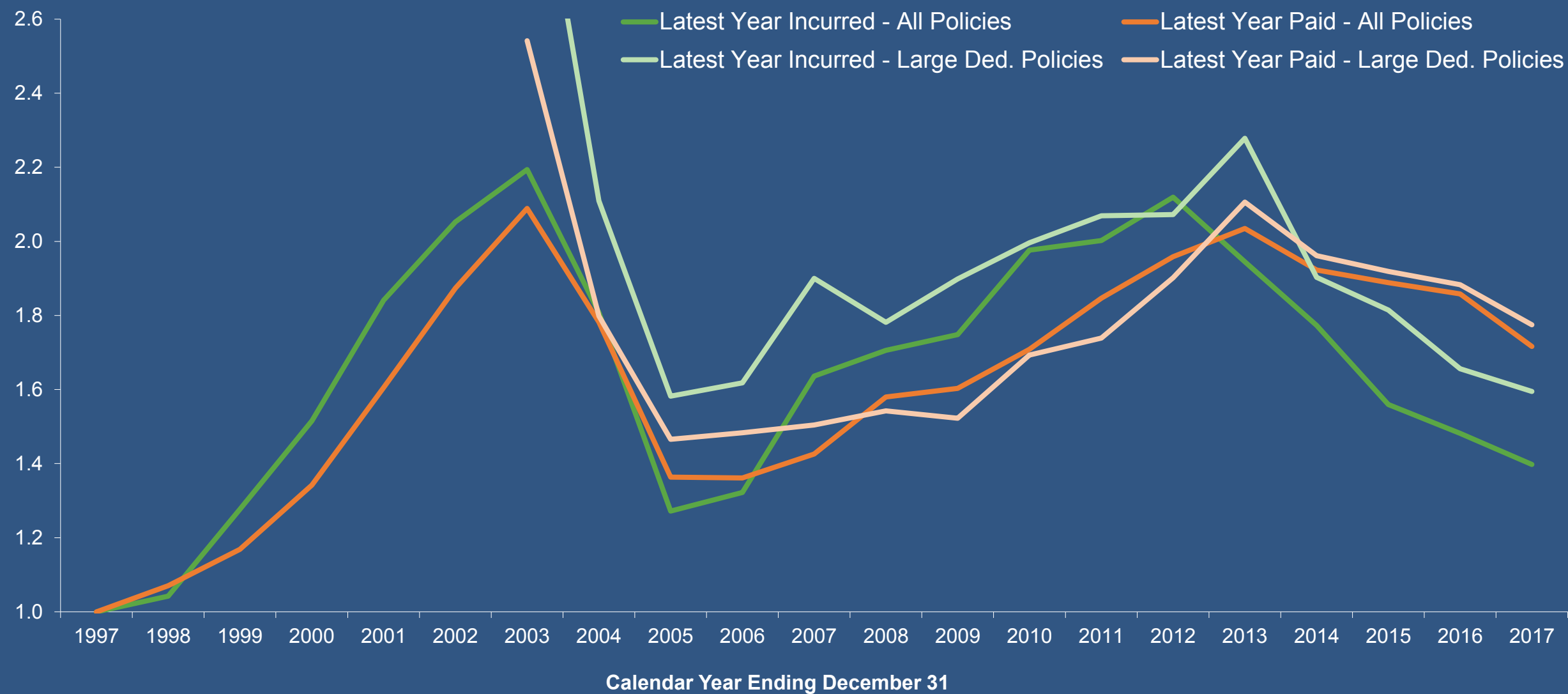
Paid Methods

- Claim Settlement Rate-Adjusted Paid
 - Best with clear evidence of changes in claim settlement rates affecting loss development
 - Improved projection during periods of significant settlement rate change
 - Primary assumptions of method reasonable based on review in 2017
 - Claim settlement rates have increased significantly over past couple years
 - Unclear how recent acceleration in claim settlement impacts tail development
- Insurer Mix-Adjusted Paid
 - Best with clear evidence of shifting market shares impacting paid patterns
 - Issues with lack of transparency and application of statewide method to individual insurer experience
 - Current projection slightly lower than unadjusted paid projection
- Bornhuetter-Ferguson (BF) Adjusted Paid
 - Best when early loss development is highly leveraged and volatile
 - Requires assumptions of trend and on-leveling in expected loss ratio projection
 - Reviewed in 2016 and found to be generally less accurate than chain-ladder method historically
 - Current projection generally consistent with chain-ladder projections

Paid vs. Incurred Development

Medical from 12 to 108 Months Indexed to 1997

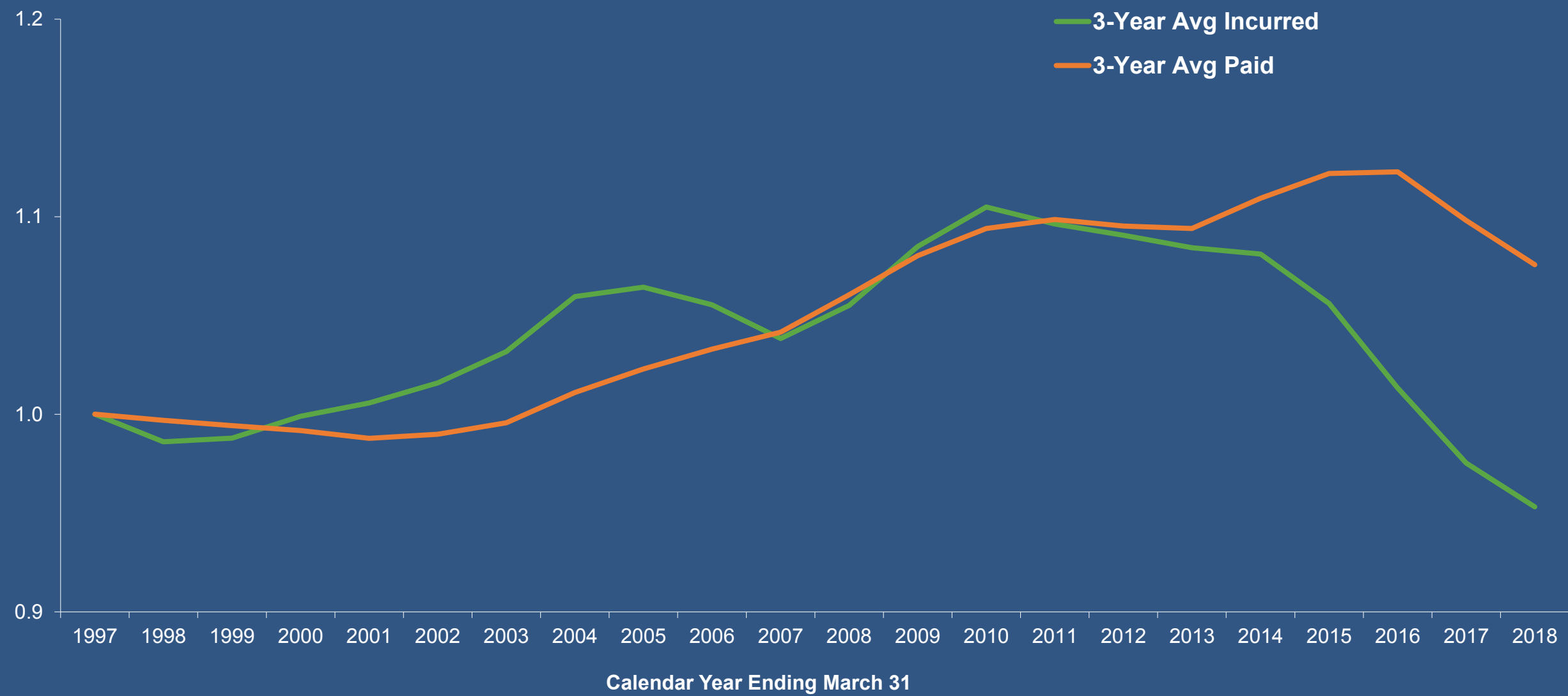
As of December 31, 2017



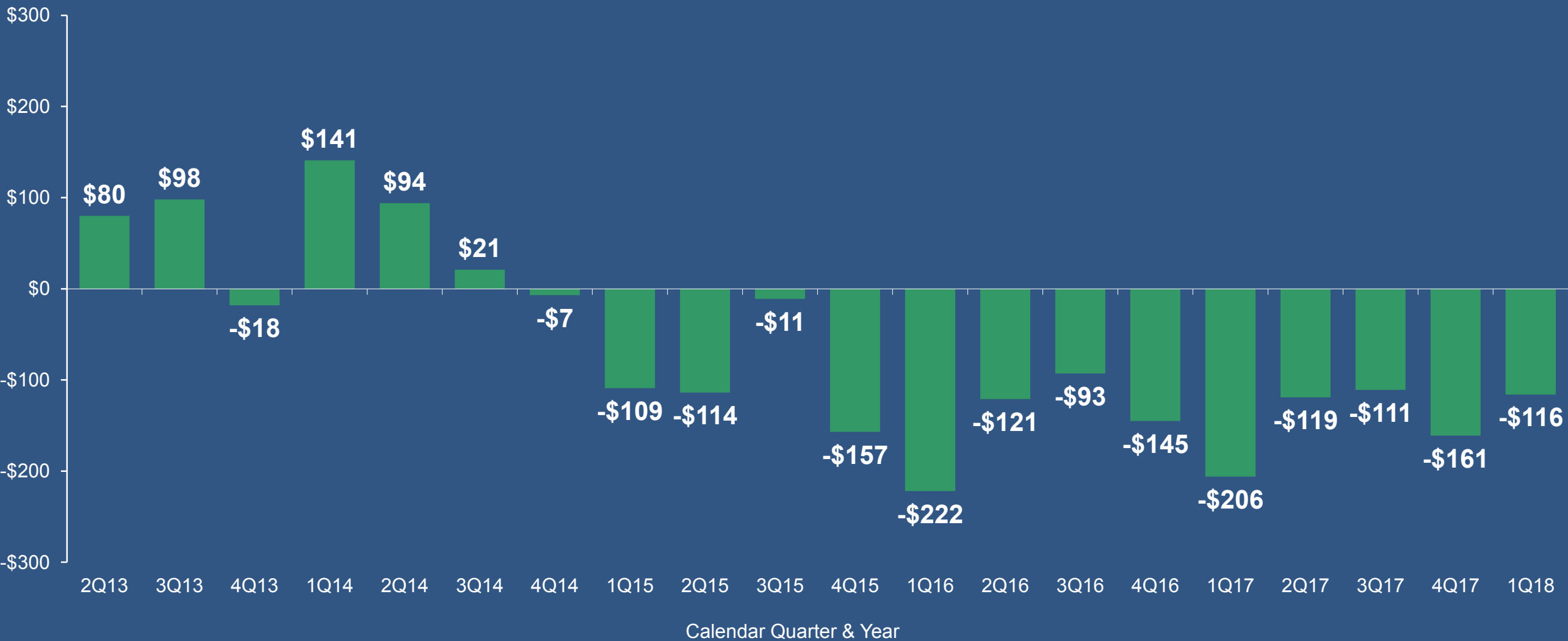
Paid vs. Incurred Development

Medical from 111 to 231 Months Indexed to 1997

As of March 31, 2018

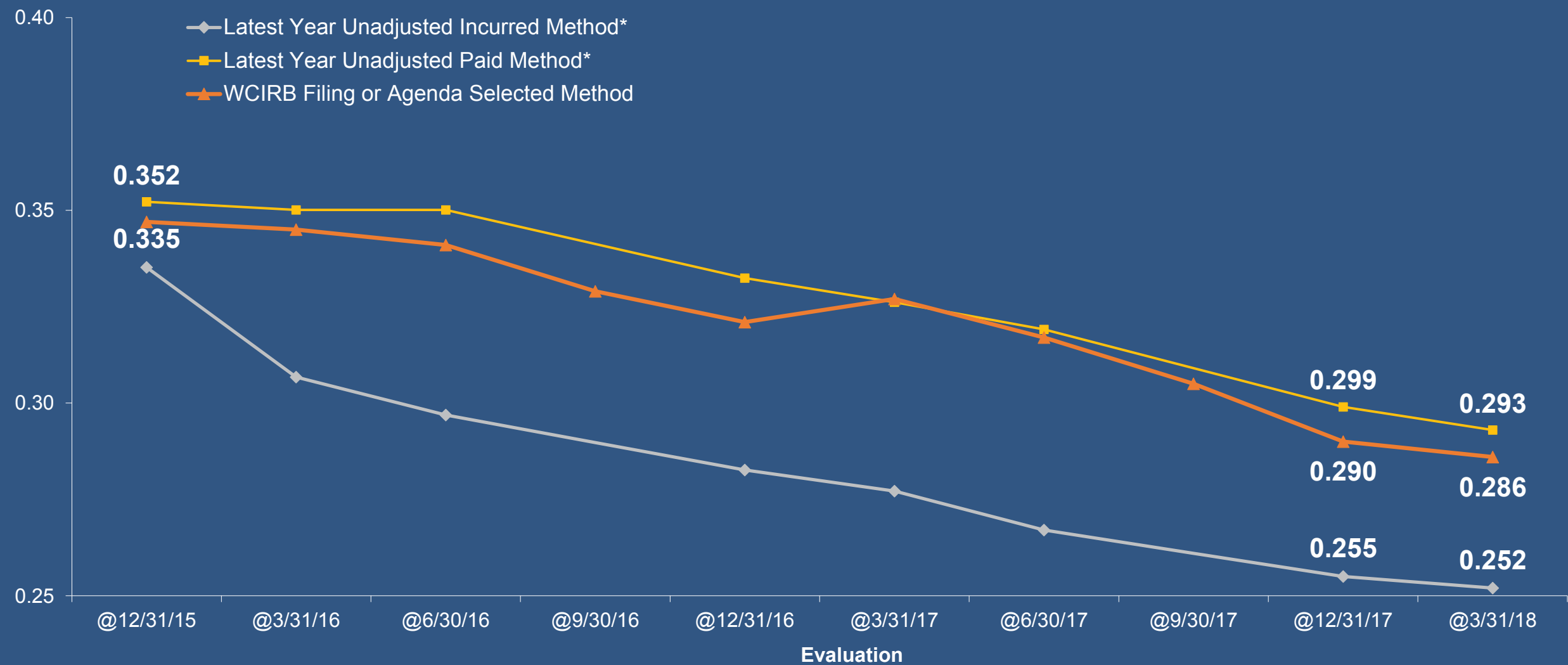


Change in Total Medical Case Reserves by Quarter



Paid vs. Incurred Development

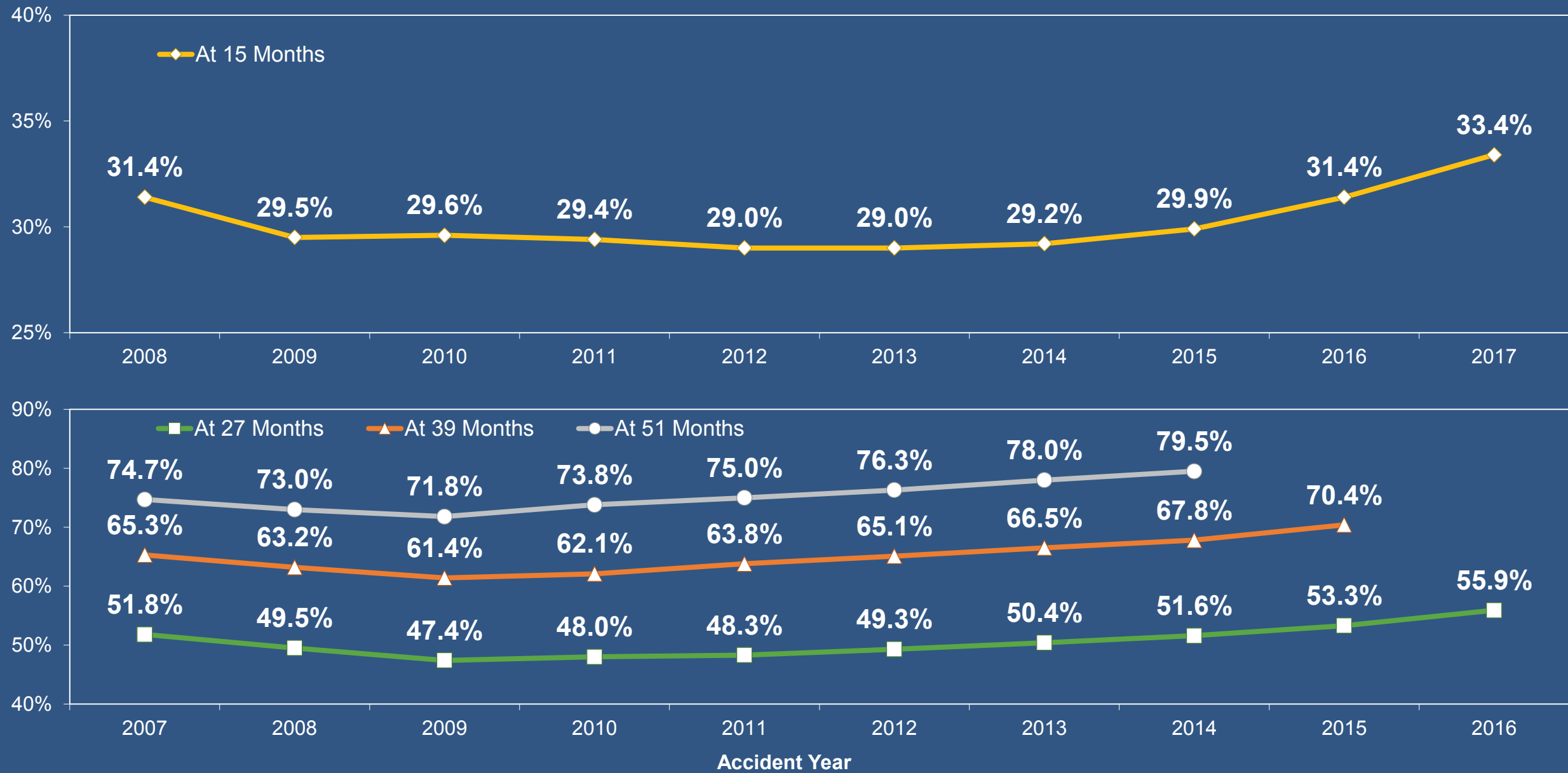
Projected Ultimate Medical Loss Ratios for Accident Year 2015



*Includes 6-year average incurred development applied after approximately 228 months and the change to the loss development tail adopted at the 4/3/2018 meeting.
Source: WCIRB aggregate financial data and projections

Ultimate Indemnity Claim Settlement Ratios (Exhibit 11.2)

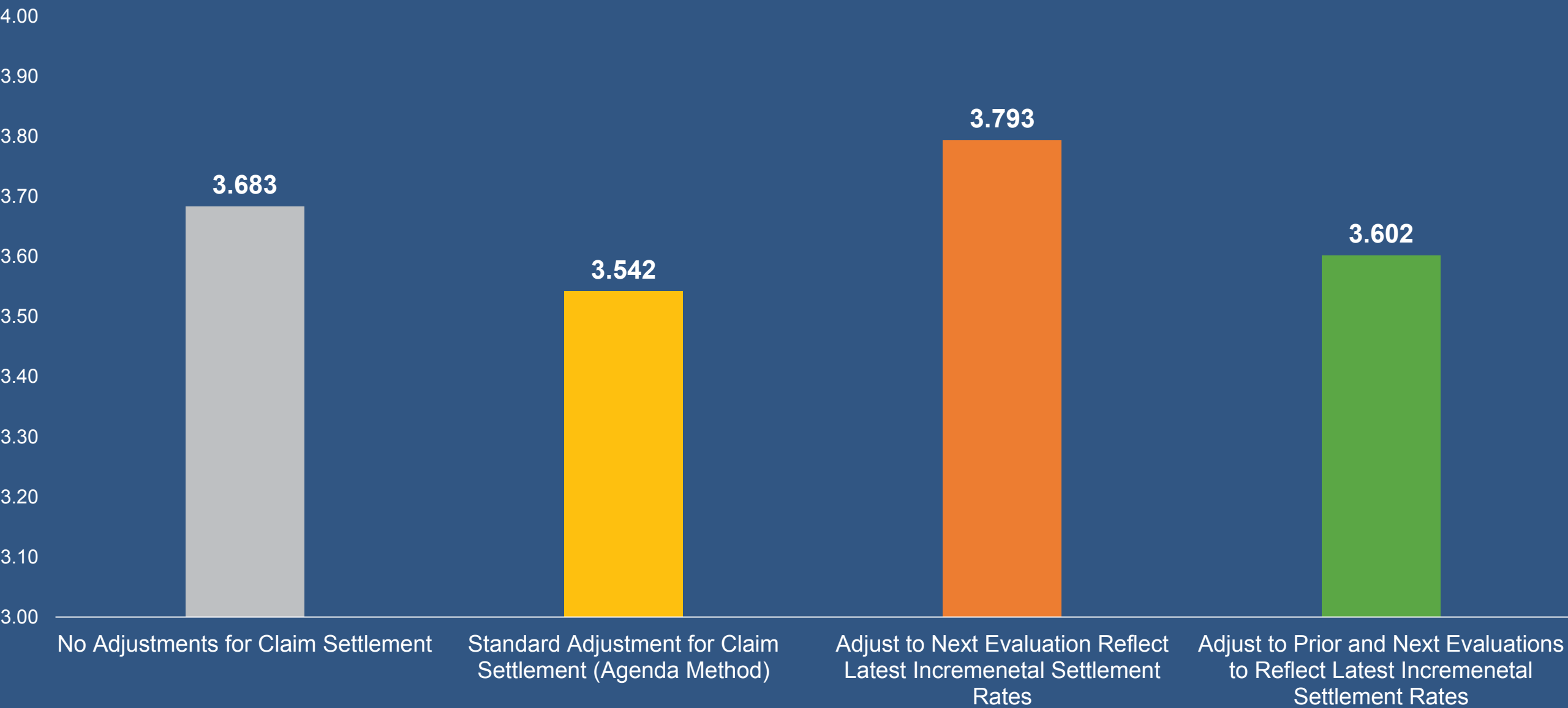
As of March 31, 2018



Impact of Adjustments for Change in Claim Settlement Rates

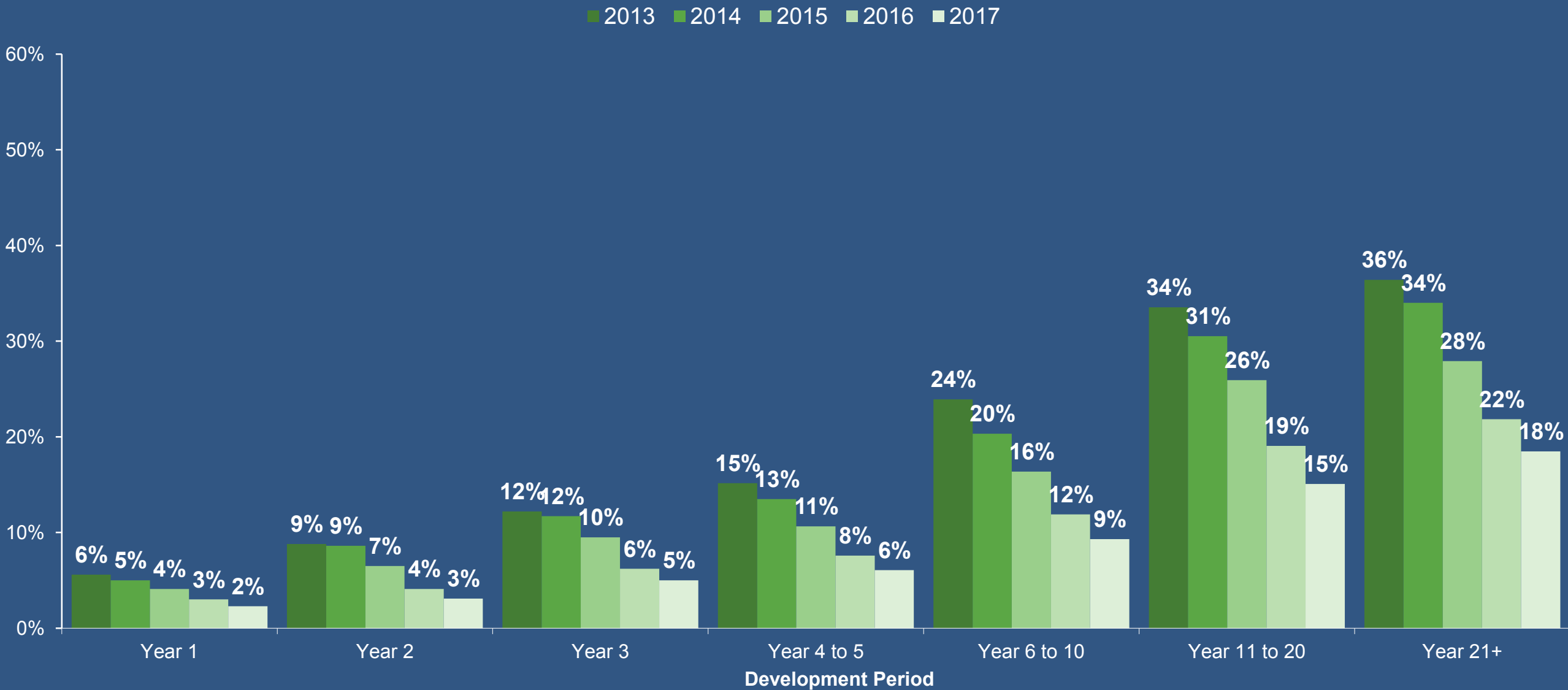
Projected 15 to 75 Month Paid Medical Development

As of March 31, 2018



Share of Total Medical Services Paid by Age and Service Type Pharmaceuticals

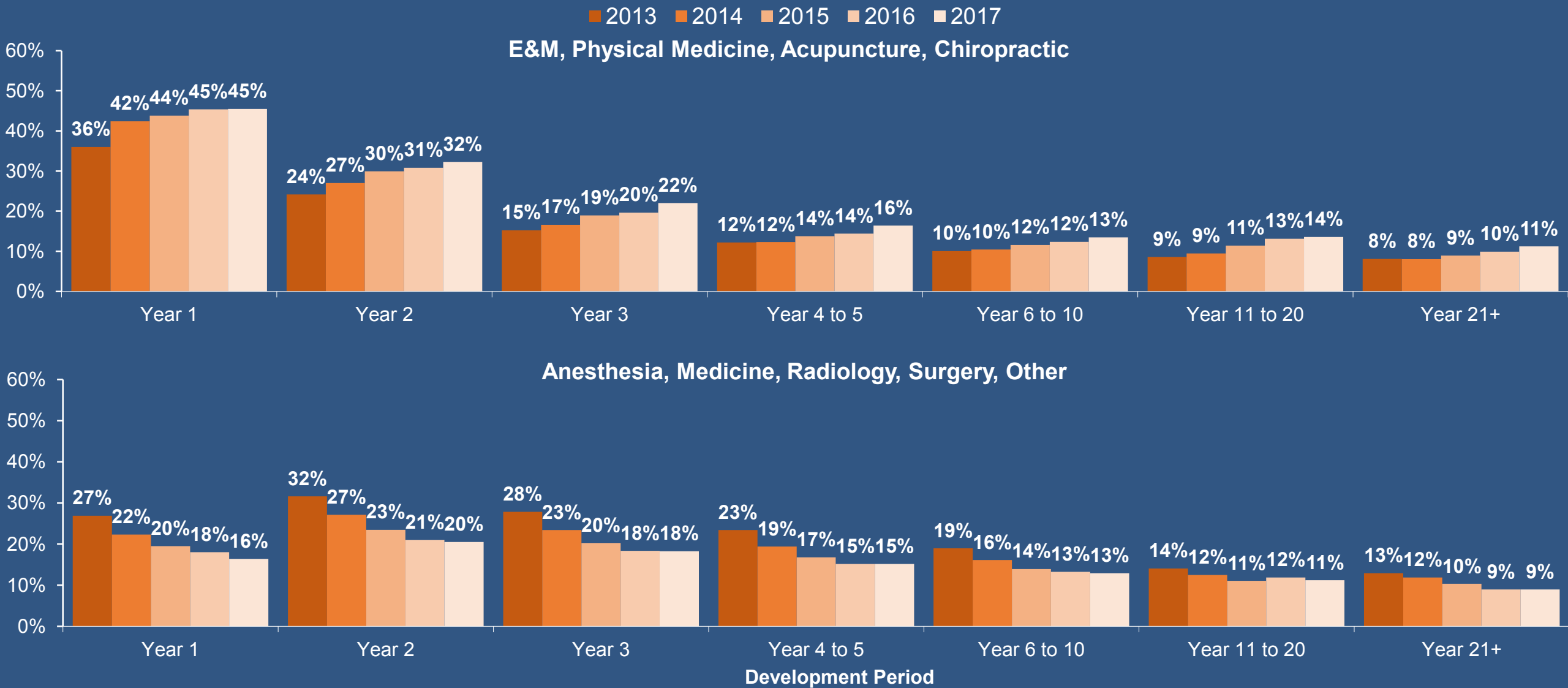
As of December 31, 2017



Share of Total Medical Services Paid by Age and Service Type

Physician Services

As of December 31, 2017

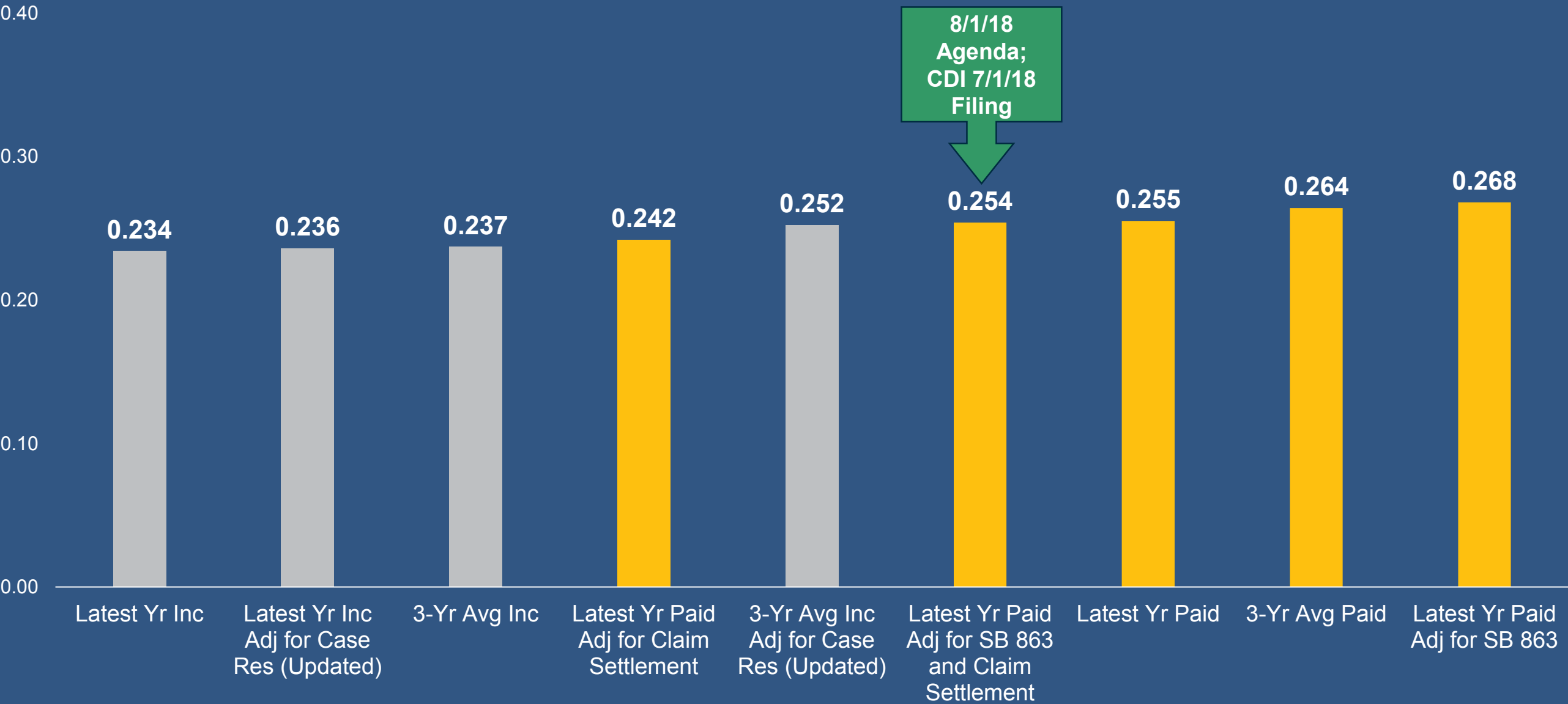


Projected Indemnity Loss Ratios Under Alternative Development Methods

Loss Development Method	Indemnity Loss Ratio
Latest Year Paid Adjusted for SB 863 and Changes in Claim Settlement Rates (Agenda)	0.254
Latest Year Paid Adjusted for Changes in Claim Settlement Rates (No SB 863 Adj.)	0.242
3-Year Average Incurred Unadjusted	0.237
Latest Year Incurred Unadjusted	0.234
3-Year Average Incurred Adjusted for Changes in Case Reserve Levels (Prior Approach)	0.244
Latest Year Incurred Adjusted for Changes in Case Reserve Levels (Prior Approach)	0.233
3-Year Average Incurred Adjusted for Changes in Case Reserve Levels (Staff Rec. Approach)	0.252
Latest Year Incurred Adjusted for Changes in Case Reserve Levels (Staff Rec. Approach)	0.236
Latest Year Incurred Adjusted for Changes in Insurer Mix	0.235
3-Year Average Paid Unadjusted	0.264
Latest Year Paid Unadjusted	0.255
Latest Year Paid Adjusted for SB 863	0.268
3-Year Average Paid Adjusted for SB 863 and Changes in Claim Settlement Rates	0.263
Latest Year Adjusted for Changes in Insurer Mix	0.253
BF Paid to 27 Months; Latest Year Reform-Adjusted after 27 Months	0.255
75% to Latest Year Reform & Claim Settlement-Adj. Paid; 25% to Latest Year Unadj. Incurred	0.249

Projected Indemnity Loss Ratios Under Alternative Development Methods

As of March 31, 2018

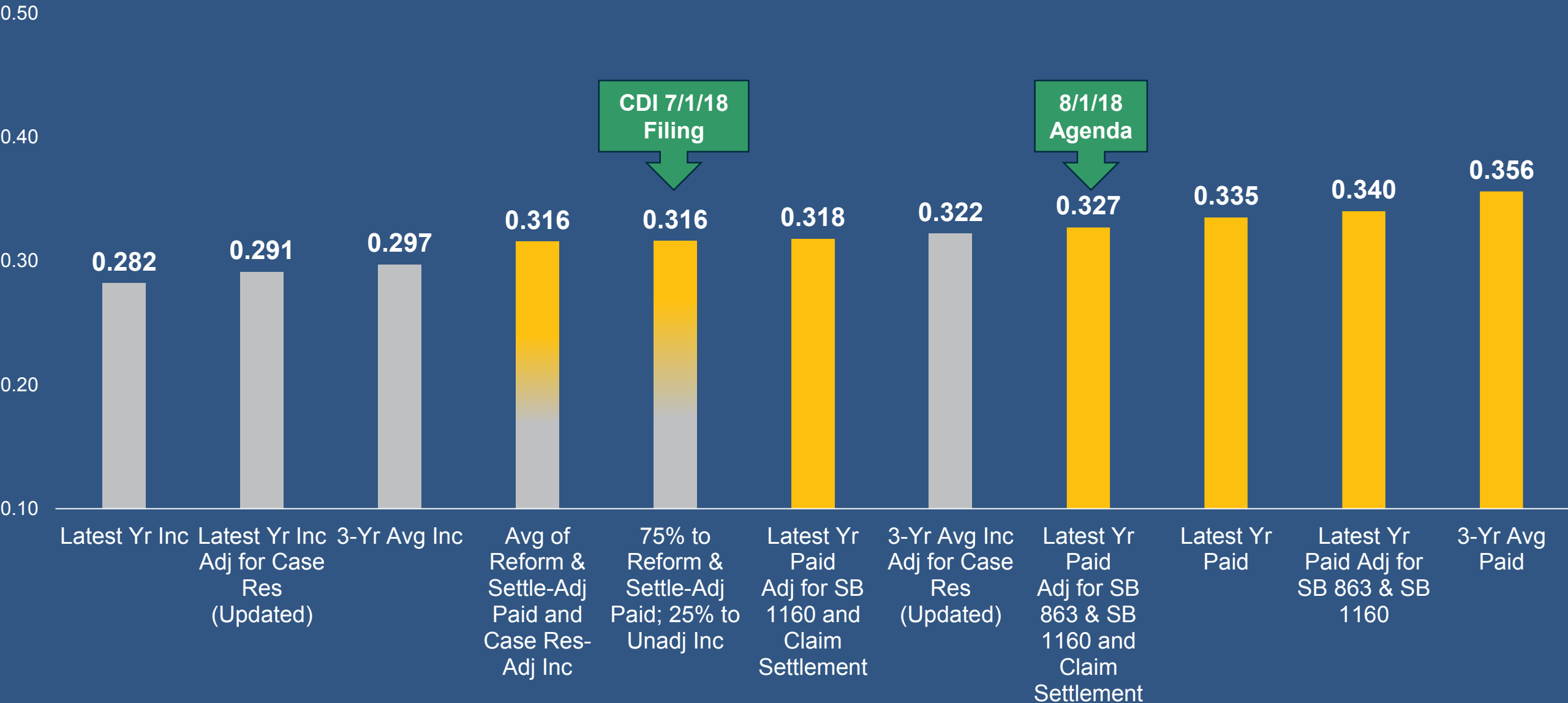


Projected Medical Loss Ratios Under Alternative Development Methods

Loss Development Method	Medical Loss Ratio
Latest Year Paid Adj. for SB 863 & SB 1160 and Changes in Claim Settlement Rates (Agenda)	0.327
Latest Year Paid Adj. for SB 1160 and Changes in Claim Settlement Rates (No SB 863 Adj.)	0.318
3-Year Average Incurred Unadjusted	0.297
Latest Year Incurred Unadjusted	0.282
3-Year Average Incurred Adjusted for Changes in Case Reserve Levels (Prior Approach)	0.295
Latest Year Incurred Adjusted for Changes in Case Reserve Levels (Prior Approach)	0.277
3-Year Average Incurred Adjusted for Changes in Case Reserve Levels (Staff Rec. Approach)	0.322
Latest Year Incurred Adjusted for Changes in Case Reserve Levels (Staff Rec. Approach)	0.291
Latest Year Incurred Adjusted for Changes in Insurer Mix	0.280
3-Year Average Paid Unadjusted	0.356
Latest Year Paid Unadjusted	0.335
Latest Year Paid Adjusted for SB 863 & SB 1160	0.340
3-Year Average Paid Adjusted for SB 863 & SB 1160 and Changes in Claim Settlement Rates	0.349
Latest Year Adjusted for Changes in Insurer Mix	0.331
BF Paid to 27 Months; Latest Year Reform-Adjusted after 27 Months	0.325
75% to Latest Year Reform & Claim Settlement-Adj. Paid; 25% to Latest Year Unadj. Incurred	0.316

Projected Medical Loss Ratios Under Alternative Development Methods

As of March 31, 2018



Cumulative Wage Level Change Forecast (Exhibit 5.1)

2016 to 2019

As of April/June 2018

20%

15%

10%

5%

0%

11.0%

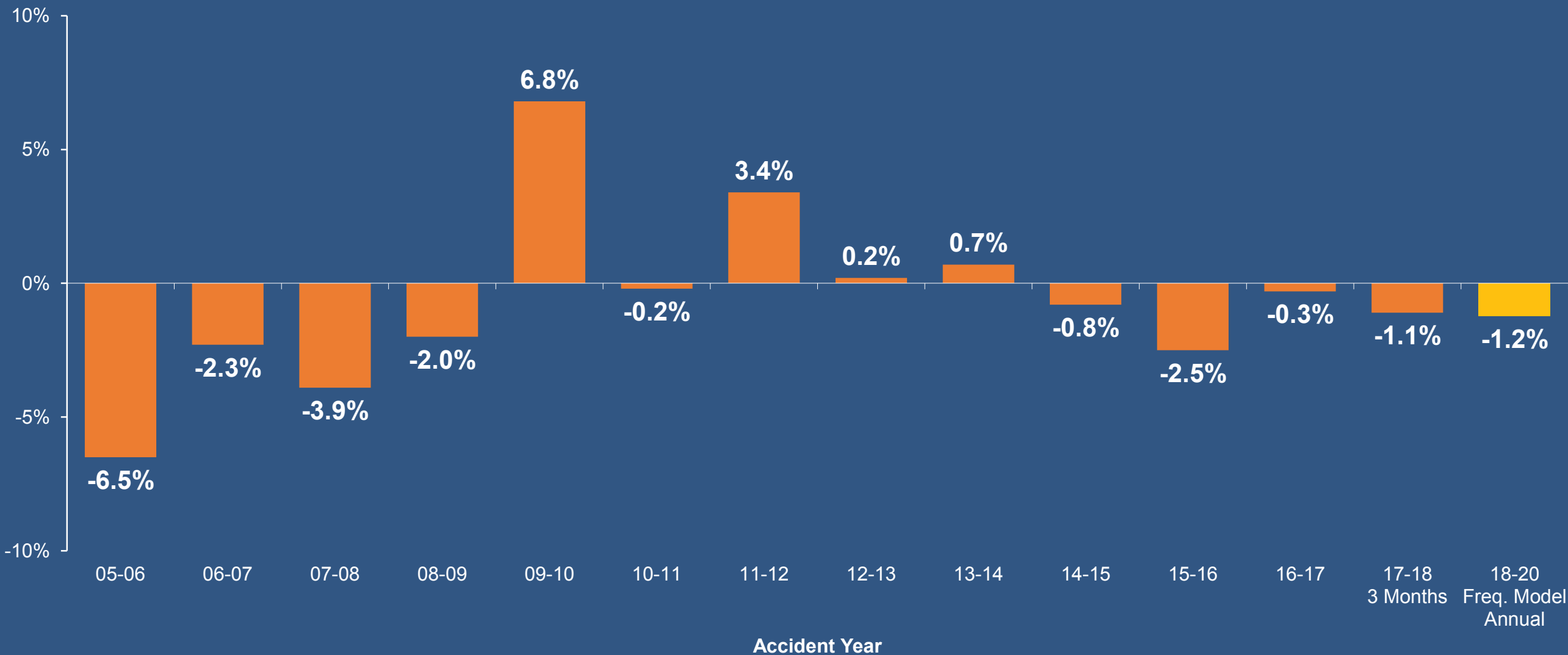
11.2%

December 2017 UCLA / November 2017 DoF

June 2018 UCLA / April 2018 DoF

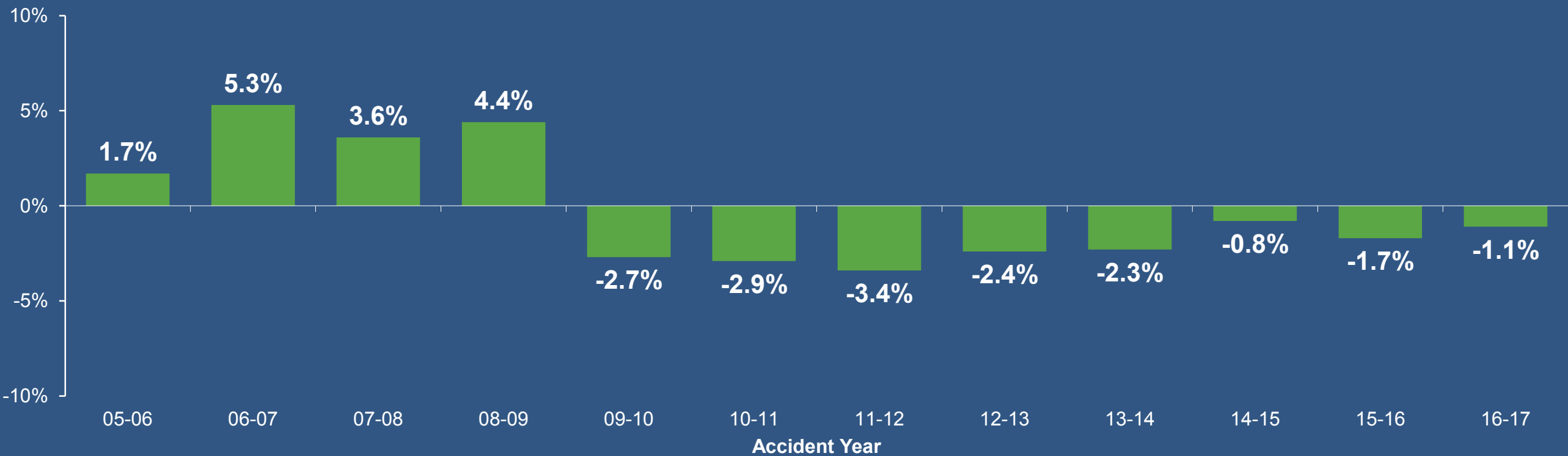
Projected Changes in Indemnity Claim Frequency (Exhibits 6.1 & 12)

As of March 31, 2018



Projected Changes in On-Level Indemnity Severity (Exhibit 6.2)

As of March 31, 2018



Annual Exponential Trend Based on:

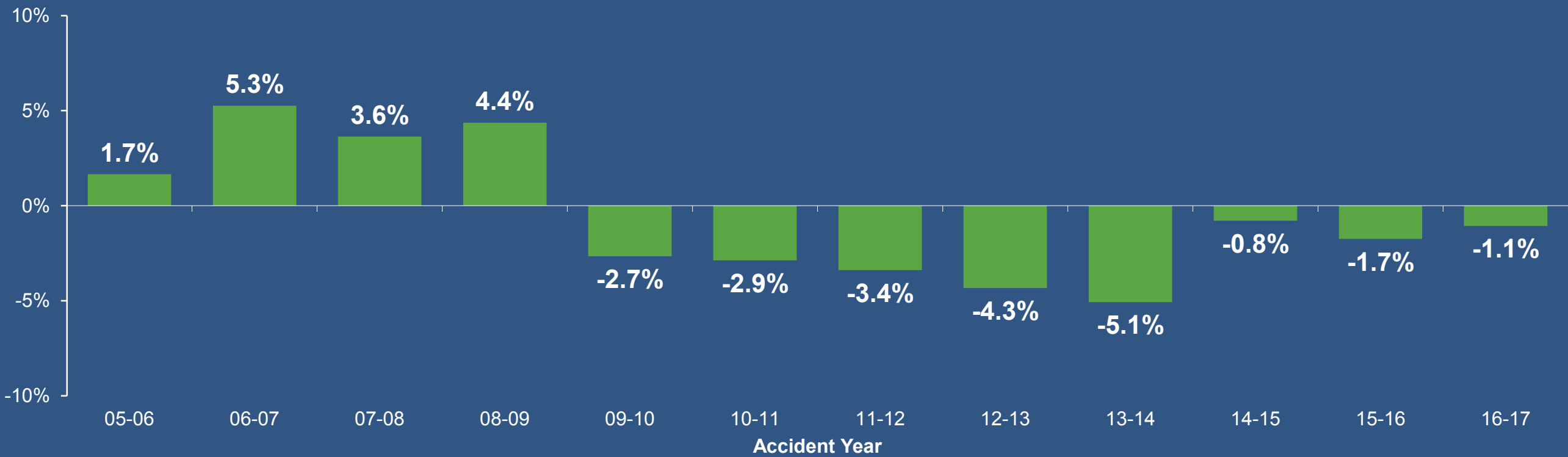
- 1990 to 2017: +1.7%
- 2005 to 2017: -0.6%
- 2013 to 2017: -1.4%

Agenda Selected: 0.0%

Projected Changes in On-Level Indemnity Severity

Excluding SB 863 Adjustments from Loss Development

As of March 31, 2018



Annual Exponential Trend Based on:

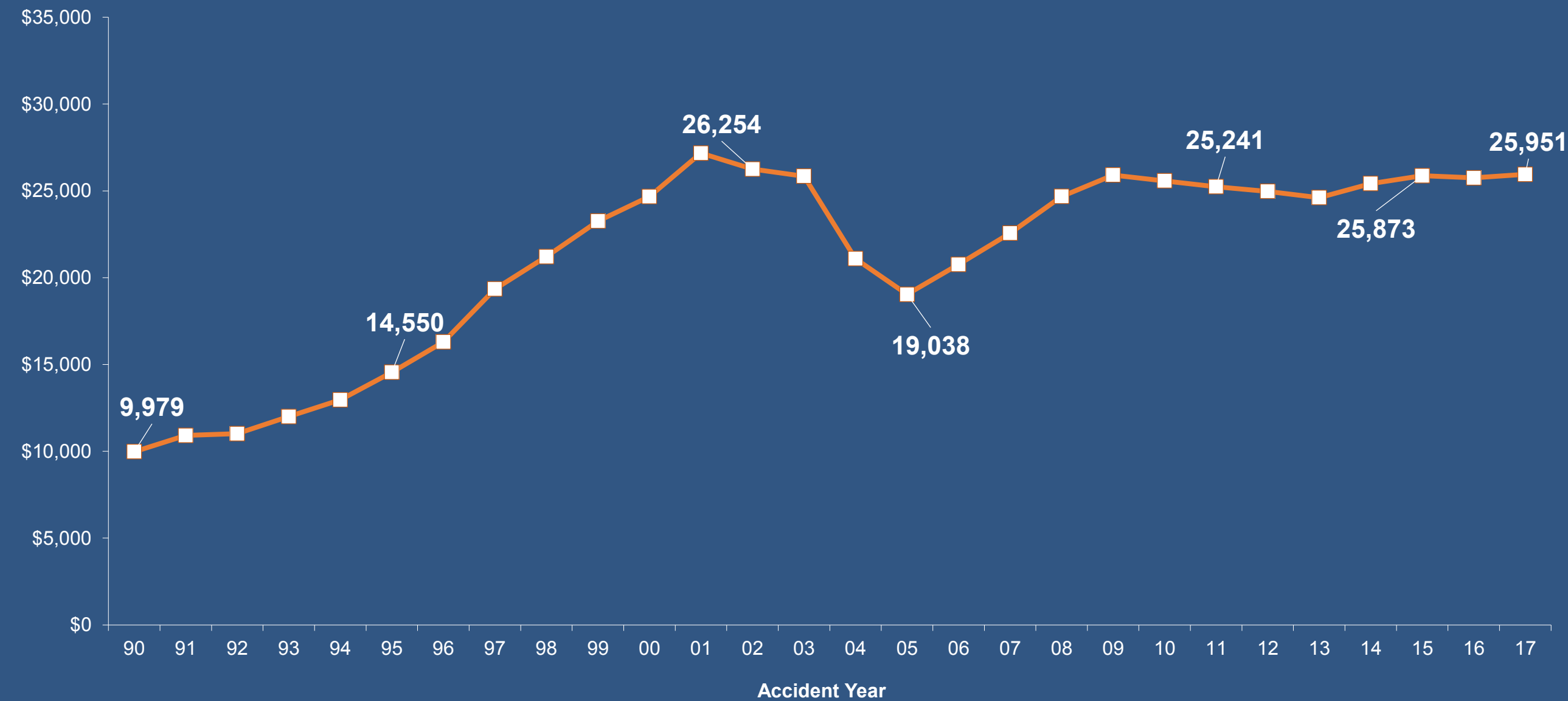
- 1990 to 2017: +1.6%
- 2005 to 2017: -1.1%
- 2013 to 2017: -2.0%

Agenda Selected: 0.0%

Ultimate Indemnity per Indemnity Claim

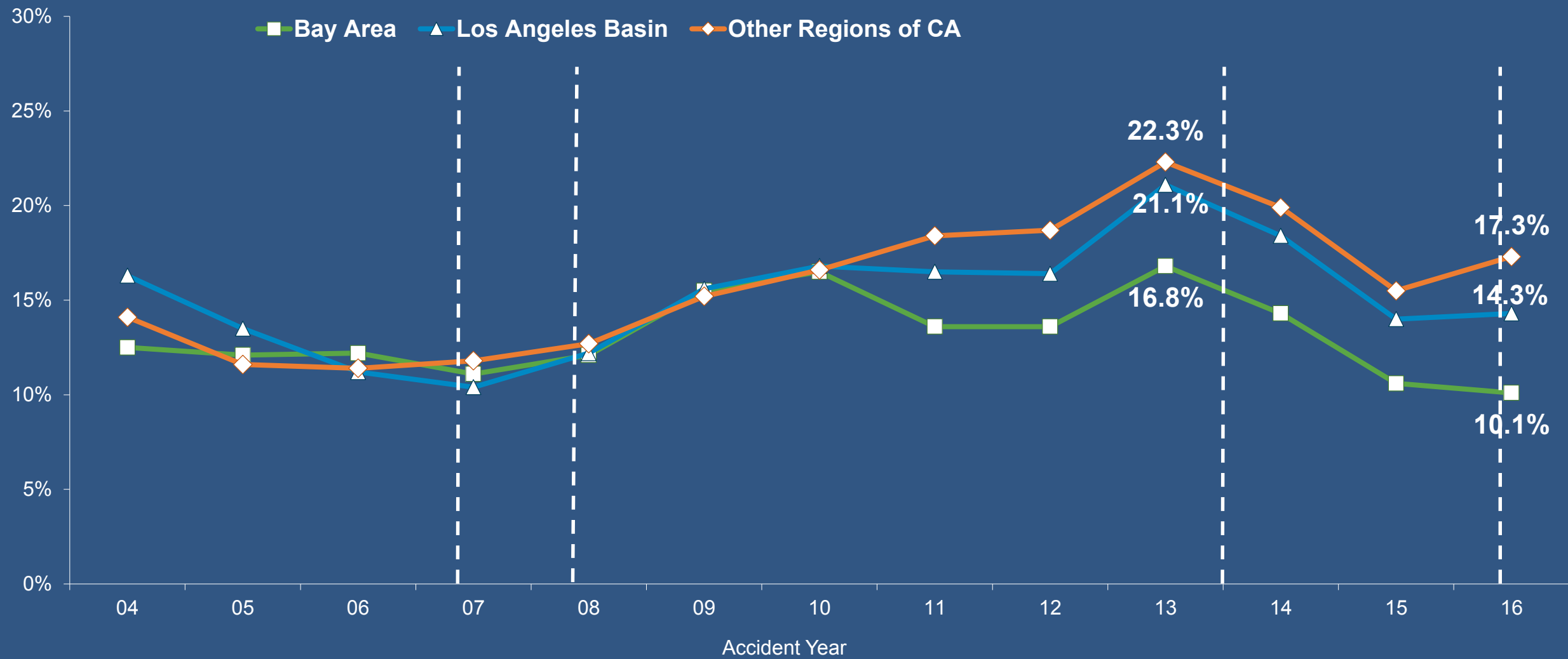
Excluding SB 863 Adjustments from Loss Development

As of March 31, 2018



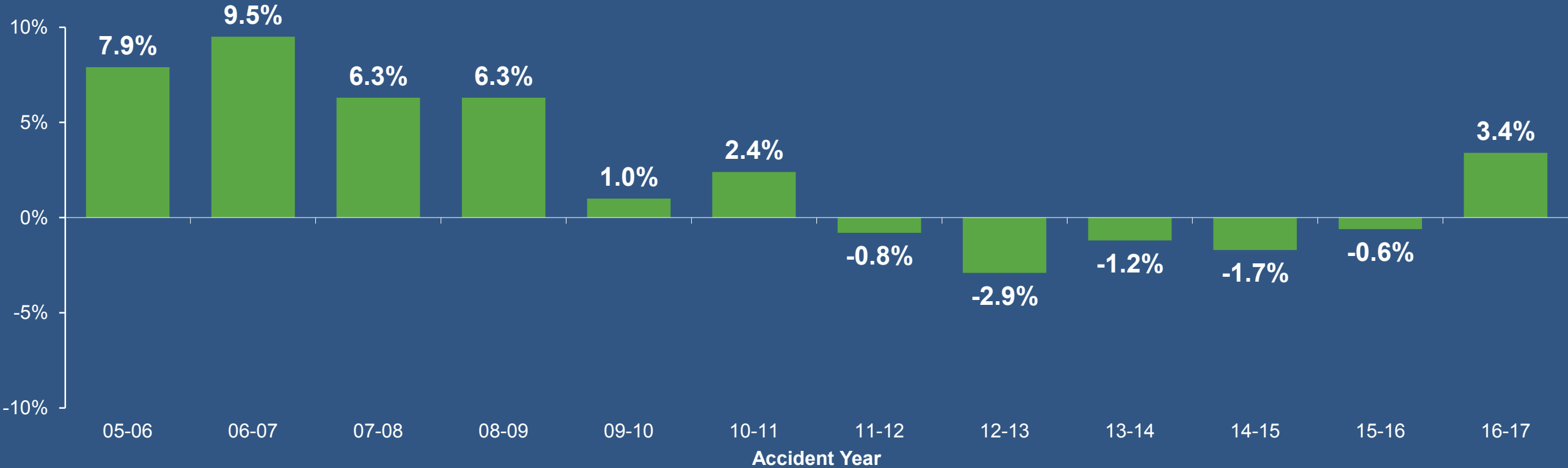
Impact of Minimum Wage Changes on Indemnity

Proportion of Claims Receiving Minimum TD Benefit



Projected Changes in On-Level Medical Severity (Exhibit 6.4)

As of March 31, 2018



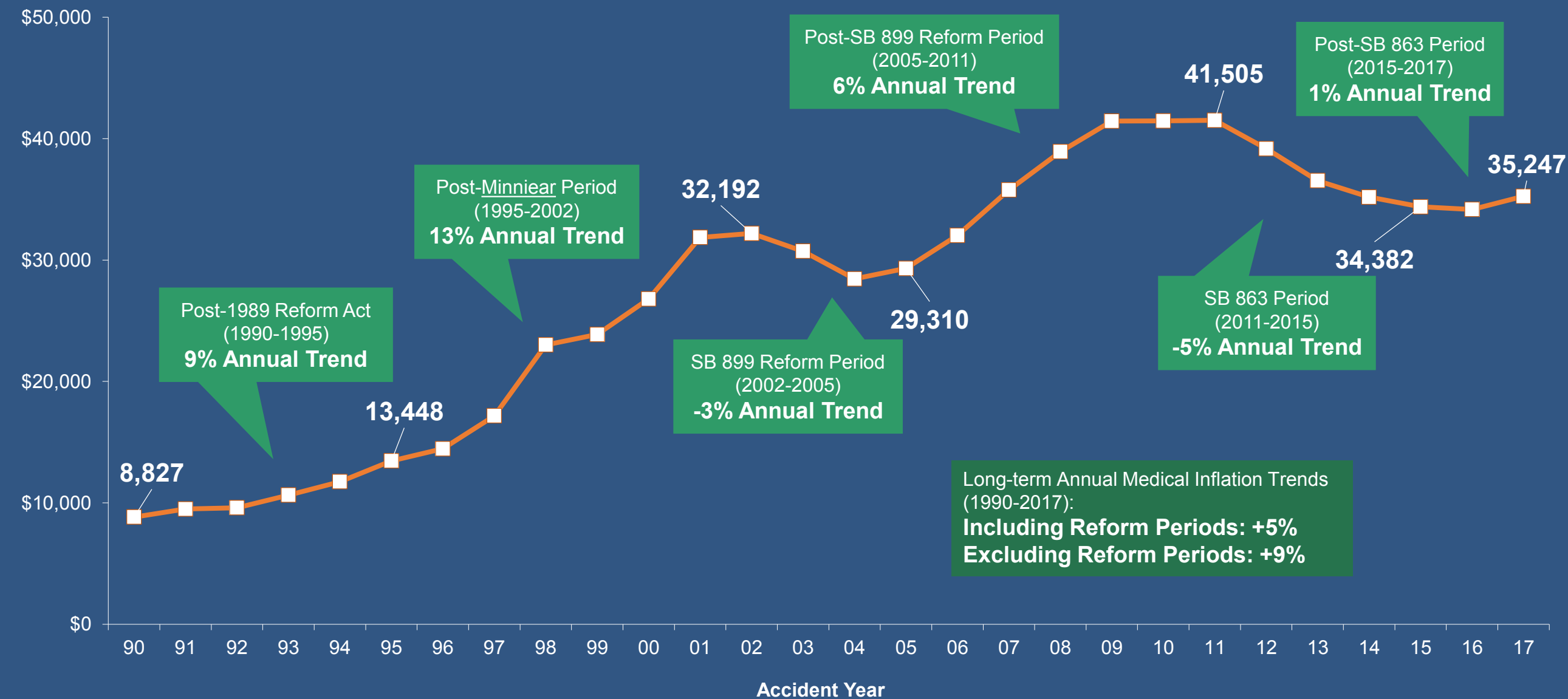
Annual Exponential Trend Based on:

- 1990 to 2017 (Incl. MCCP): +6.0%
- 2005 to 2017: +1.7%
- 2013 to 2017: -0.3%

Agenda Selected: 3.0%

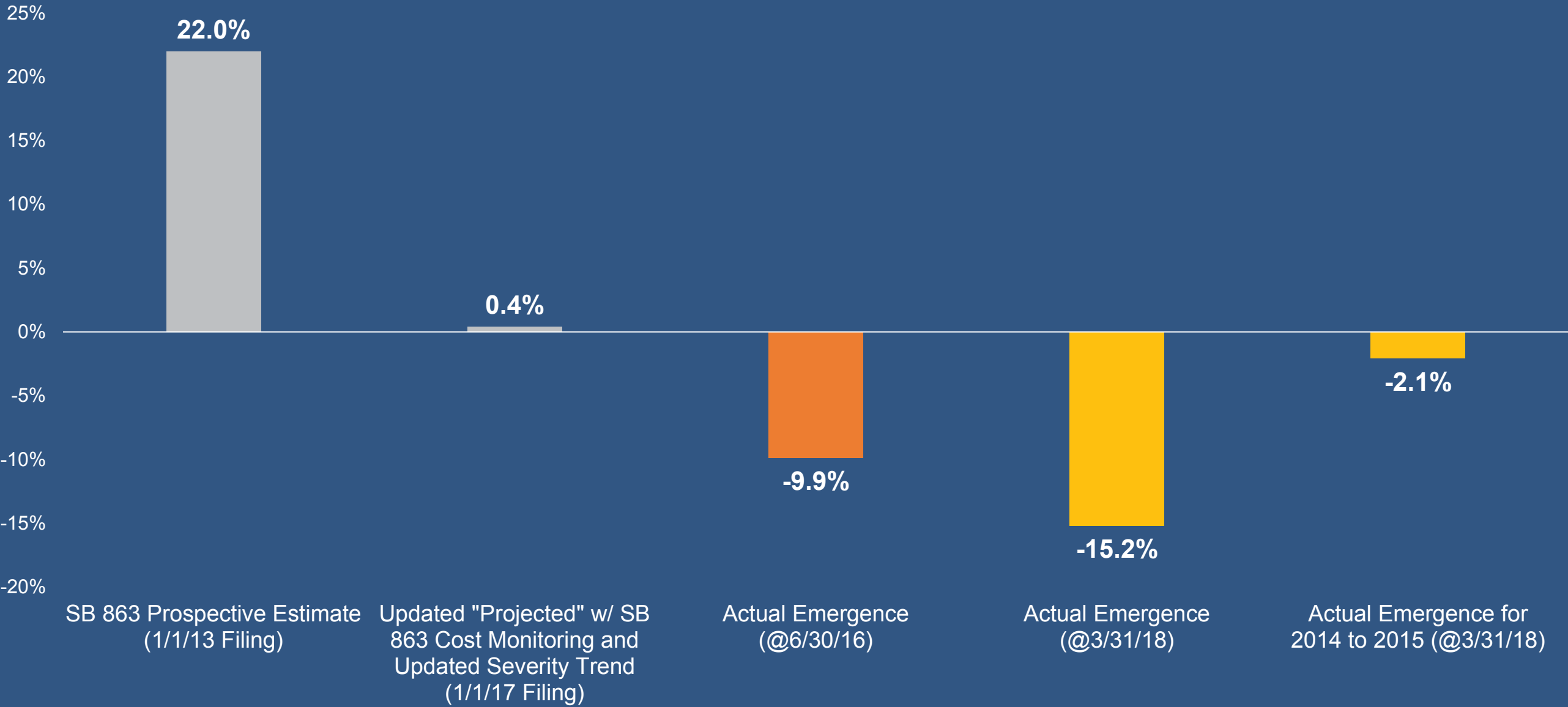
Ultimate Medical per Indemnity Claim (Exhibits 6.3 & 6.4)

As of March 31, 2018



Impact of Recent Reforms on Medical Utilization

Cumulative Medical Severity Change from 2011 to 2014



Estimated Impact of Medical Utilization Change by Accident Year

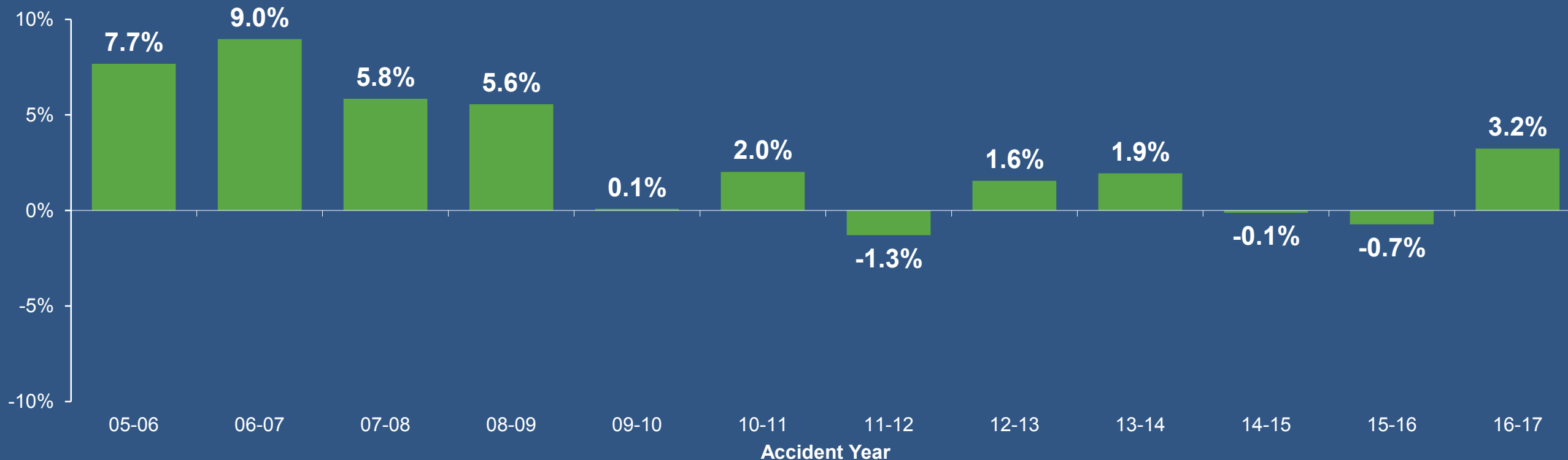
Accident Year	Cum. Share of Impact Based on Paid @12/31/13	Cumulative Impact of -15% Util. Change	Incremental Impact of -15% Util. Change	Prior Incremental Impact (-10% Change)
2010	0%	0%	0%	0%
2011	22%	-3%	-3%	-2%
2012	48%	-7%	-4%	-3%
2013	80%	-12%	-5%	-3%
2014	100%	-15%	-3%	-2%
2015	N/A	N/A	-2%*	0%

*Judgmentally estimated

Projected Changes in On-Level Medical Severity

Excluding SB 863 Adjustments from Loss Development & Updated Utilization Change

As of March 31, 2018



Annual Exponential Trend Based on:

1990 to 2017 (Incl. MCCP): +6.1%

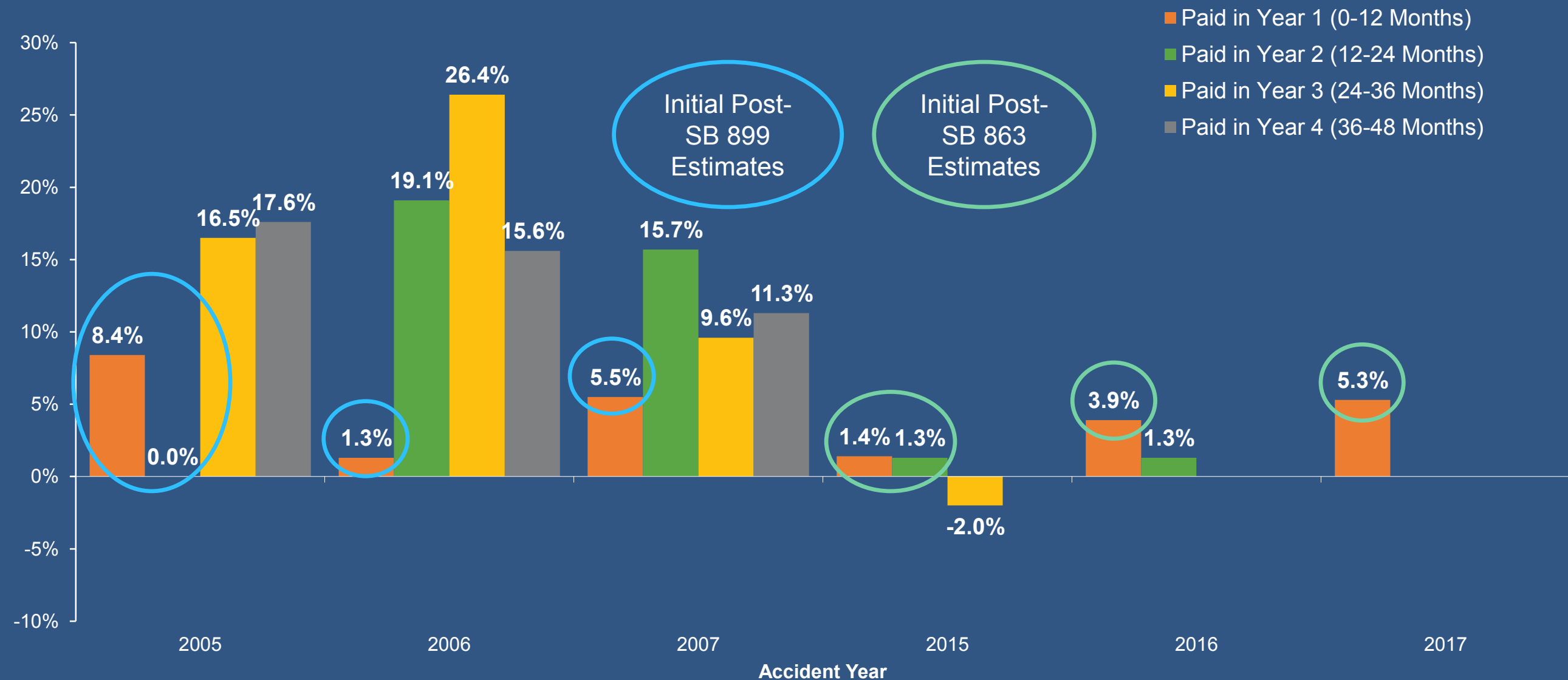
2005 to 2017: +2.3%

2013 to 2017: +0.8%

Agenda Selected: **3.0%**

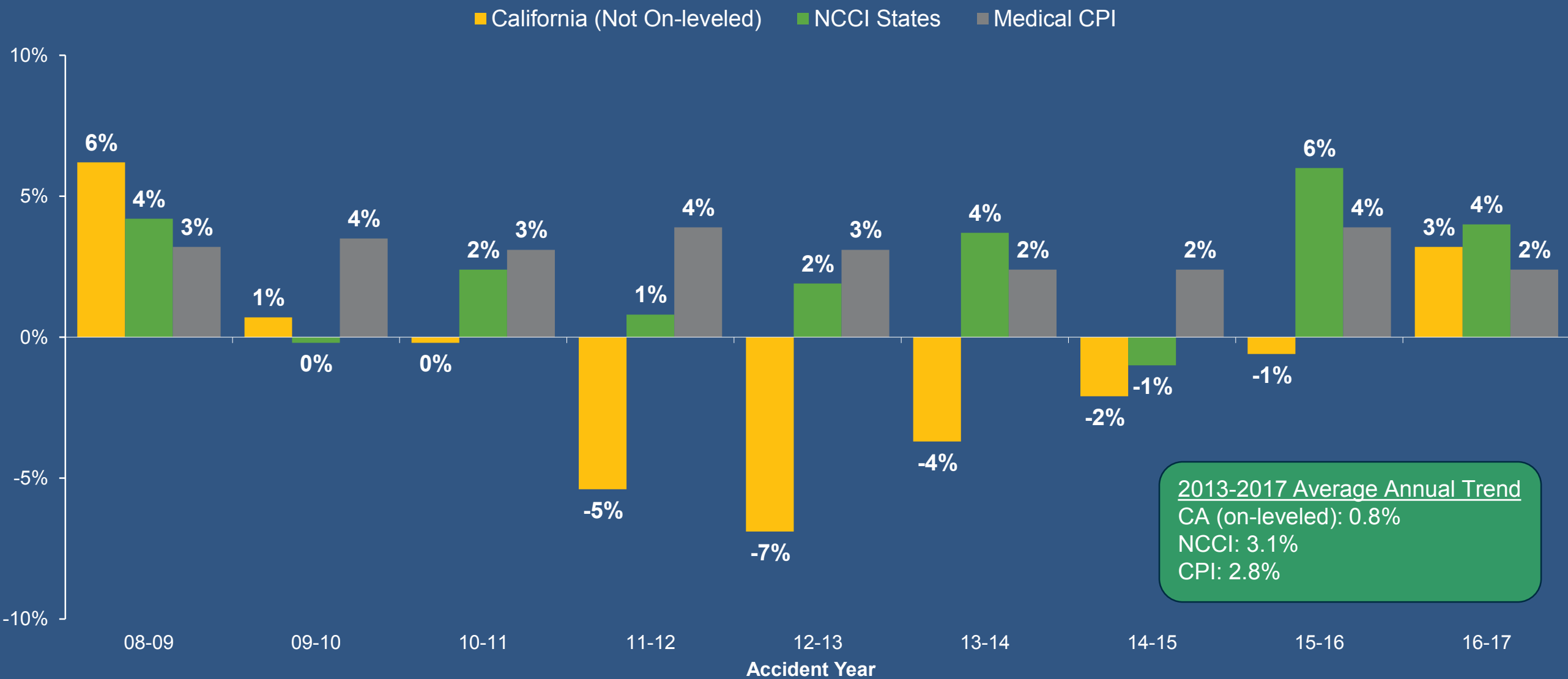
Changes in Incremental Medical Paid per Indemnity Claims Inventory

Early Post-reform Periods Compared to Later Calendar Year Inflation



Comparison of Medical Severity Changes

As of March 31, 2018



Alternative Trending Methodologies (Item AC18-08-03)

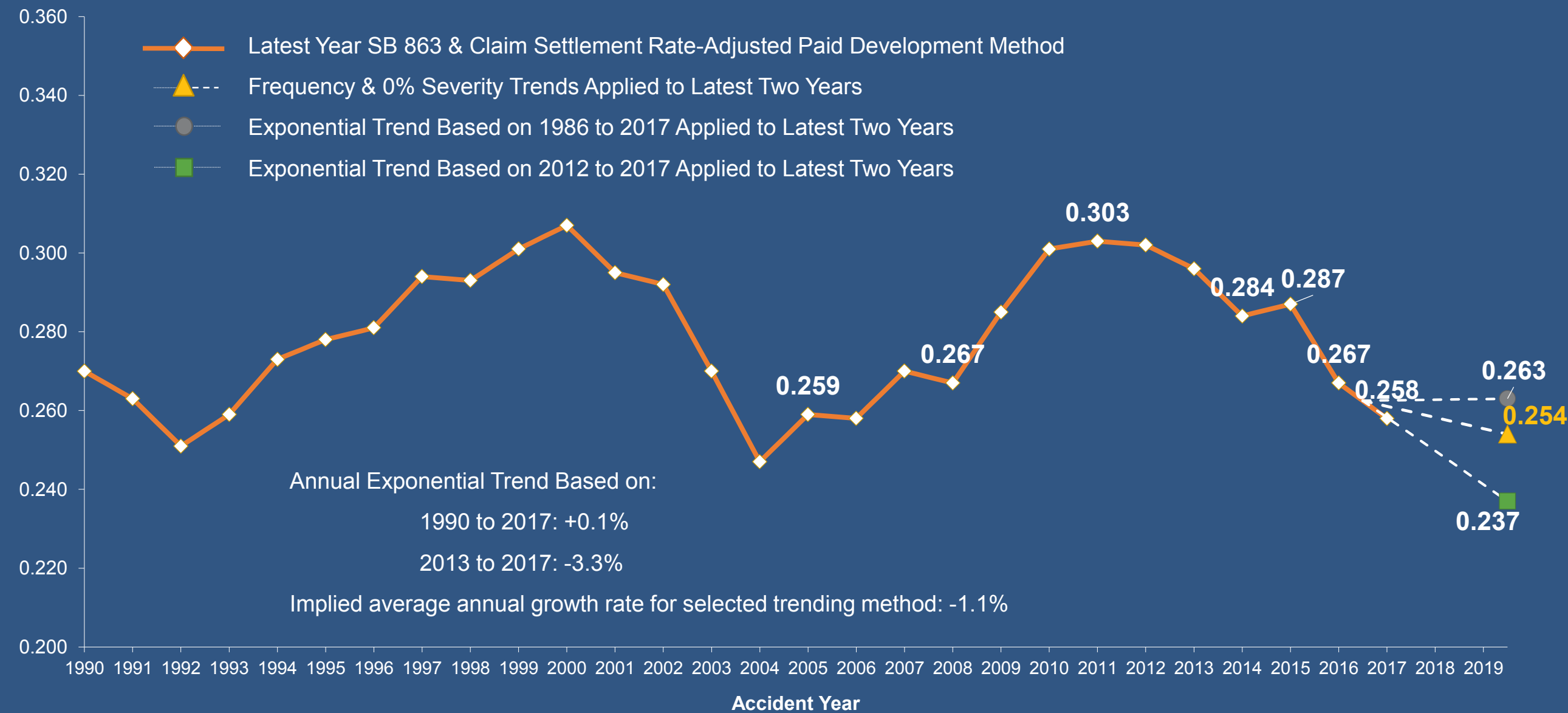
- Separate Frequency & Severity Trends Projections
 - Best during periods when loss ratios are volatile
 - Frequency and severity are affected by differing underlying forces
 - Allows for separate assumptions and judgment about future trends
 - Assumes frequency & severity not highly correlated
 - Performed well during 2002-2004 reform and SB 863 transition periods but not recession period
 - Also performed well in most recent study of trending methods
 - Recent modest frequency decreases consistent with model forecasts
 - On-level indemnity severity relatively flat over last several years
 - On-level medical severity modestly increasing after declines during SB 863 & SB 1160 transition periods
 - Significant medical inflation has historically followed periods of reform
 - Other jurisdiction medical severities have been modest
 - Trending from two-year average generally outperformed latest year method in recent review

Alternative Trending Methodologies (Item AC18-08-03)

- Loss Ratio Trend Projections
 - Best during periods with stable loss ratio trends
 - Historical loss ratios fit reasonably well to exponential curve
 - Rely on accurate on-leveling adjustments
 - Performed well during recent recession period
 - Did not perform well during 2002 to 2004 reform and SB 863 transition periods when trends moderate
 - Generally not as accurate as frequency & severity method in most recent trending study
 - Recent trends have moderated with SB 863 & SB 1160 reforms
 - Current loss ratio projections lower than separate frequency & severity projections
 - Trending from two-year average generally outperformed latest year method in recent review

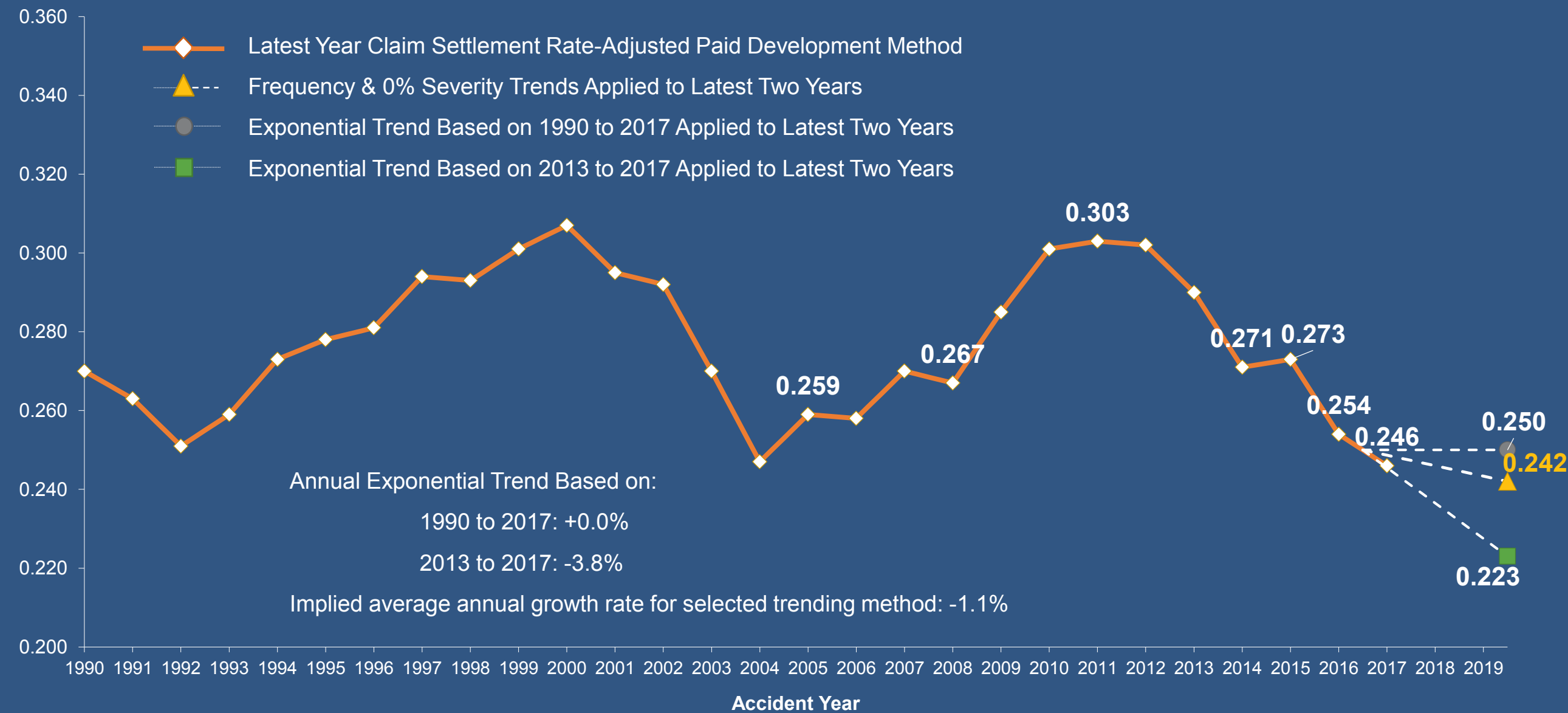
Projected On-level Indemnity Loss Ratios (Exhibit 7.1)

As of March 31, 2018



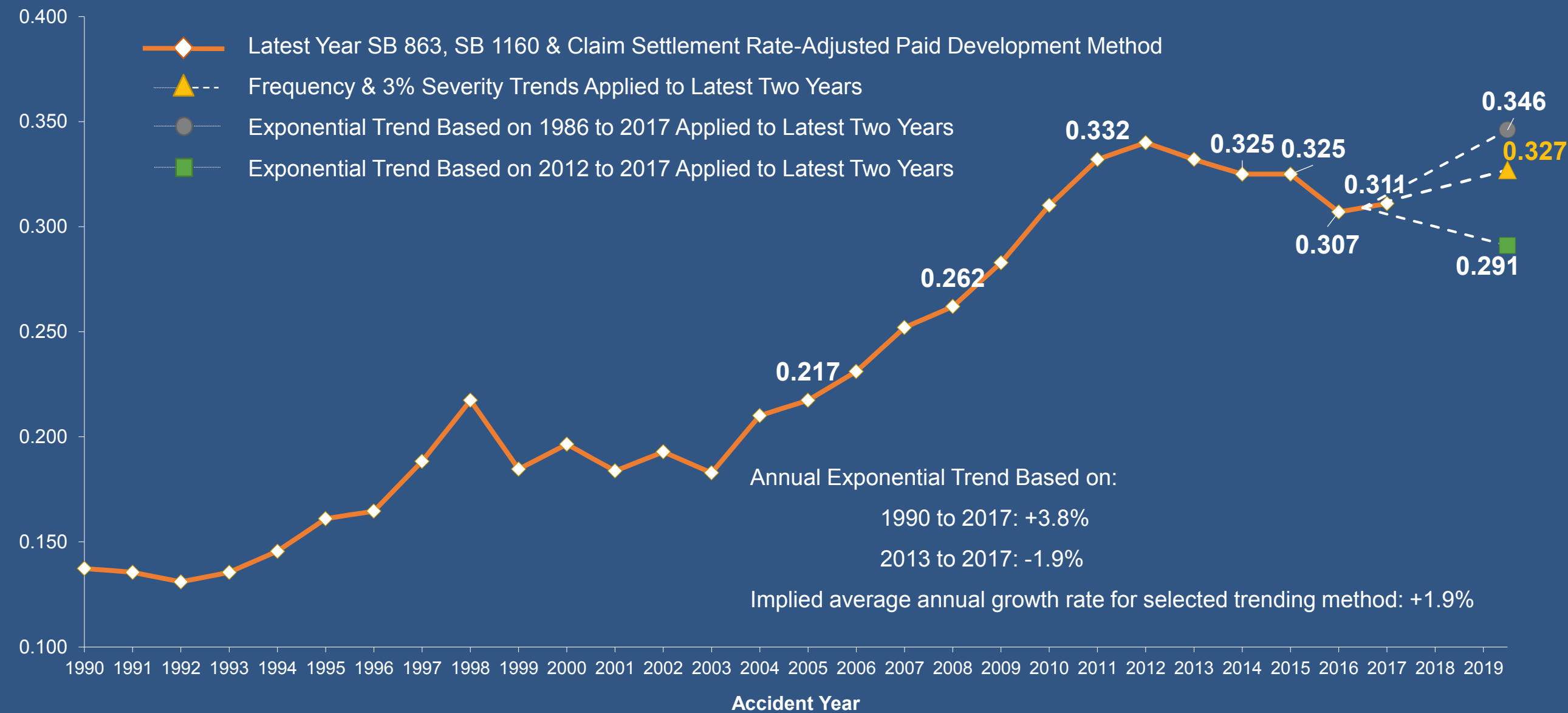
Projected On-level Indemnity Loss Ratios (Exhibit 7.1)

As of March 31, 2018



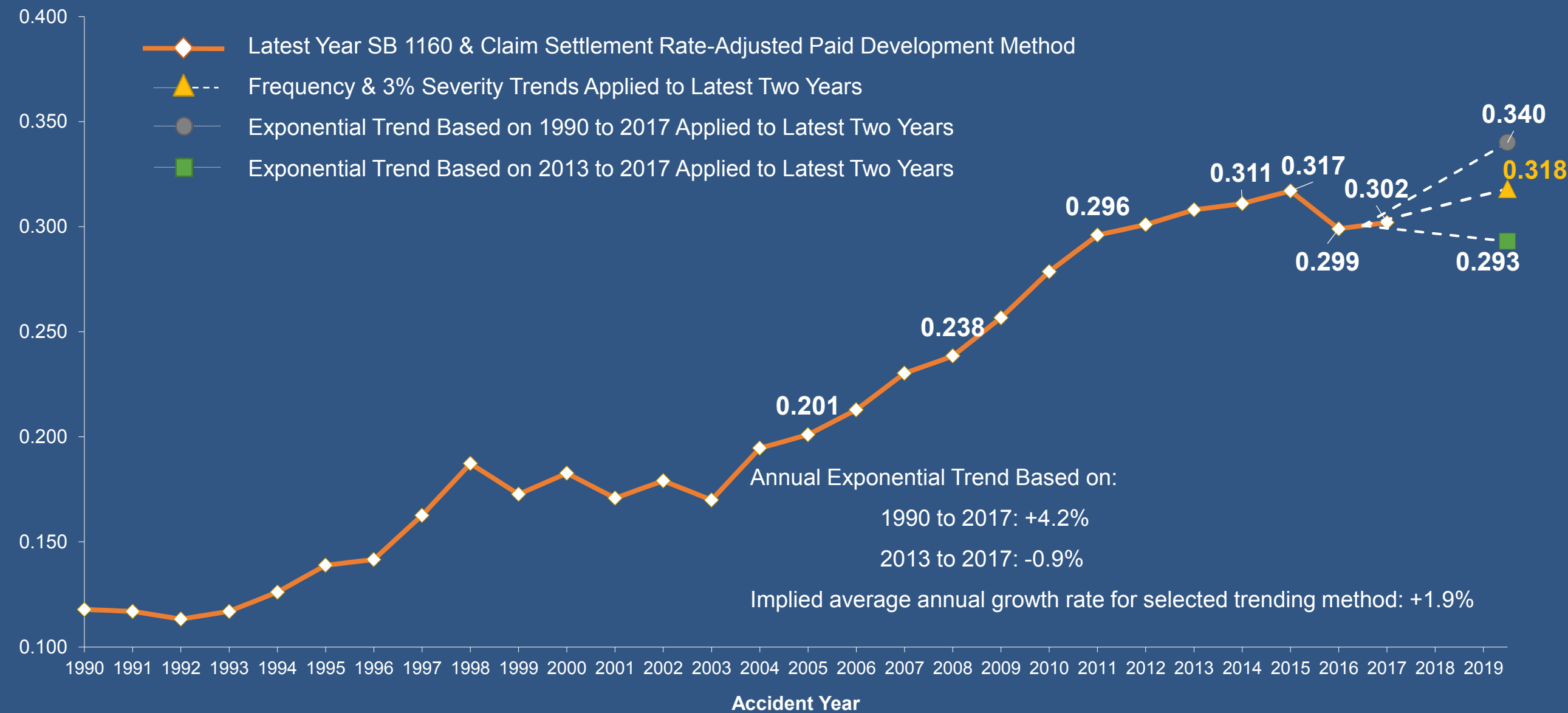
Projected On-level Medical Loss Ratios (Exhibit 7.3)

As of March 31, 2018



Projected On-level Medical Loss Ratios (Exhibit 7.3)

As of March 31, 2018

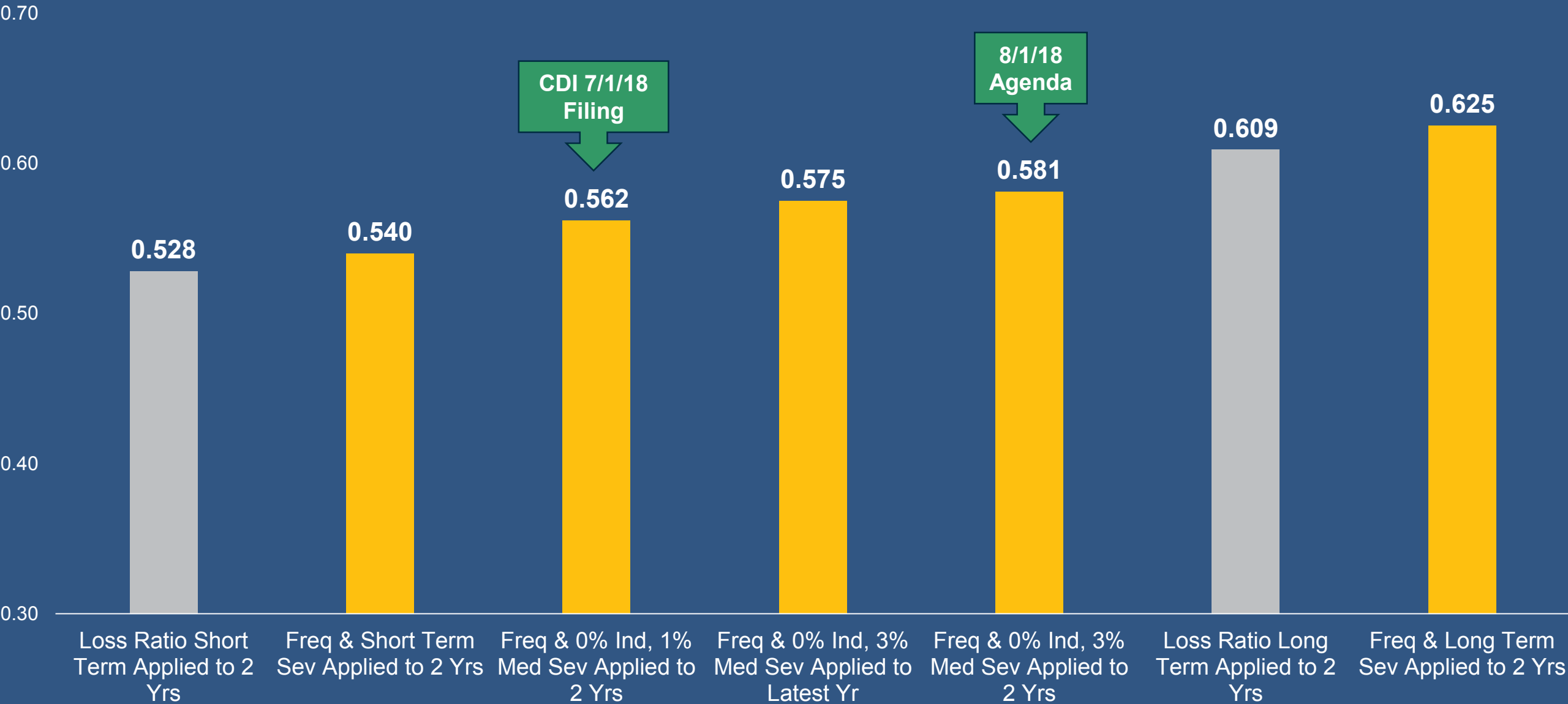


Projected Loss Ratios Under Alternative Trending Methods

Trending Method	Total Loss Ratio
Separate Frequency and Severity (0% Indemnity; 3% Medical) to Latest Two Years (Agenda)	0.581
Separate Frequency and Severity (0% Indemnity; 3% Medical) to Latest Year	0.575
Separate Frequency and Long-term Severity (1.7% Indemnity; 6.0% Medical) to Latest Two Years	0.625
Separate Frequency and Short-term Severity (-1.4% Indemnity; -0.4% Medical) to Latest Two Years	0.540
Separate Frequency and Severity (0% Indemnity; 1% Medical) to Latest Two Years	0.562
Loss Ratio Long-term Trend (0.1% Indemnity; 3.8% Medical) to Latest Two Years	0.609
Loss Ratio Short-term Trend (-3.3% Indemnity; -2.0% Medical) to Latest Two Years	0.528
Loss Ratio Exponential Trend Fit to 2013 to 2017	0.533

Projected Loss Ratios Under Alternative Trending Methods

As of March 31, 2018



06

1/1/2019 Filing – Loss Adjustment Expense Experience Review



Adjustments to ULAE

- 2015 Study – focus on differences in ULAE between insurers writing primarily in CA and those writing in other states
- Changes to 2015 Expense Call to collect:
 - Negative “service fee”-type adjustments to CW ULAE
 - Losses on deductible policies or handled by TPA in which associated ULAE not in reported CW amounts
 - Various CW amounts consistent with IEE
 - ULAE for 2015 and forward adjusted for ratemaking using this information
 - ULAE for 2013 & 2014 partially adjusted based on information provided by several large national insurers
- 2017 Study – review method of apportioning CW ULAE to CA
 - Open indemnity claim counts determined to be a more accurate basis than paid losses
- Changes to 2017 Expense Call to collect:
 - CW indemnity claim counts open as of the 12/31 of the prior calendar year (12/31/16)
 - CW open counts as of 12/31/15 also provided by several large national insurers to adjust 2016 ULAE

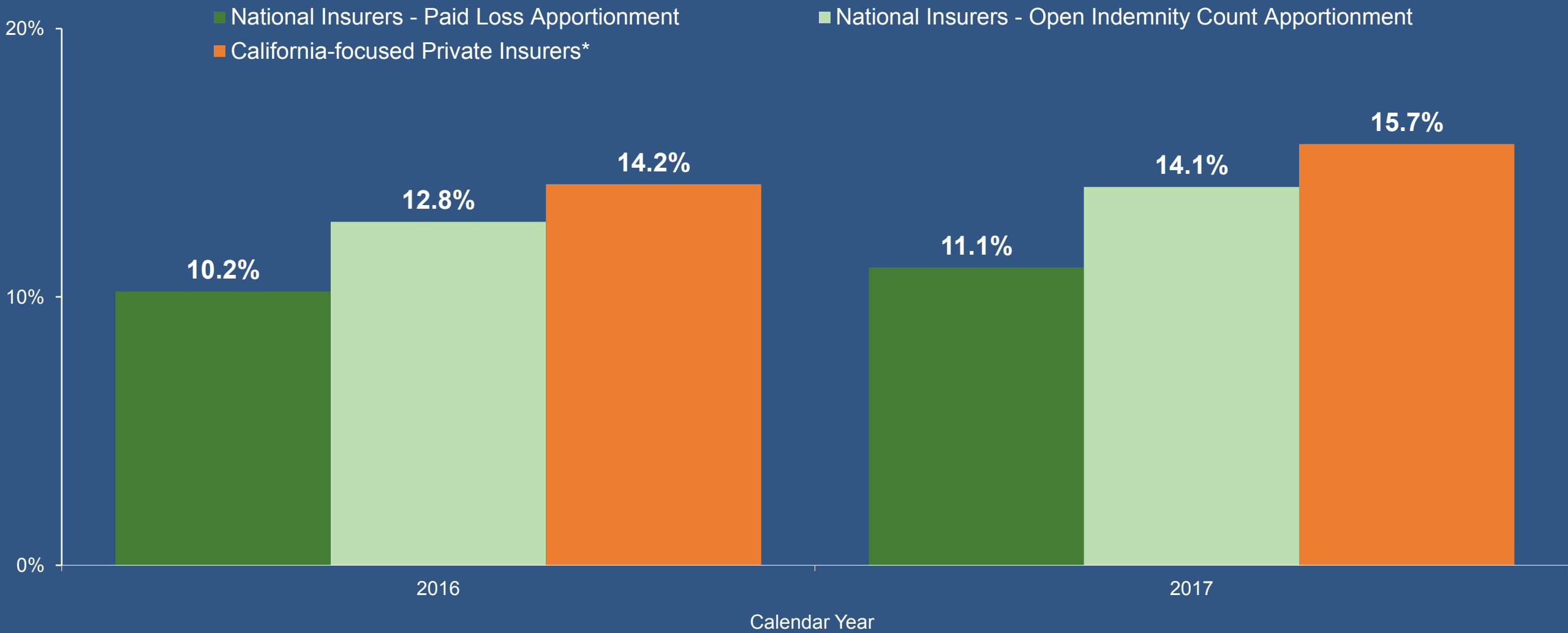
Computation of Adjusted ULAE for CA for 2016 & 2017

1.	CW ULAE Adjusted For Negatives	=	[CW Paid ULAE] + [Amount of Negative ULAE Adjustment]
2.	Adjusted CW Losses	=	[CW Paid Losses] – [Loss for Claims not in ULAE from Deduct. Policies] – [Loss for Claims not in ULAE from Non-Deduct. Policies]
3.	Adjusted CW ULAE Ratio	=	$\frac{[\text{CW ULAE Adjusted for Negatives}]}{[\text{Adjusted CW Losses}]}$
4.	Adjusted CW Paid ULAE	=	[Adjusted CW ULAE Ratio] x [CW Gross Paid Losses]
5.	Adjusted CA Paid ULAE	=	$\frac{[\text{Adjusted CW Paid ULAE}] \times [\text{CA Open Indemnity Claim Counts}]}{[\text{CW Open Indemnity Claim Counts}]}$

Ratios of Paid ULAE to Paid Losses

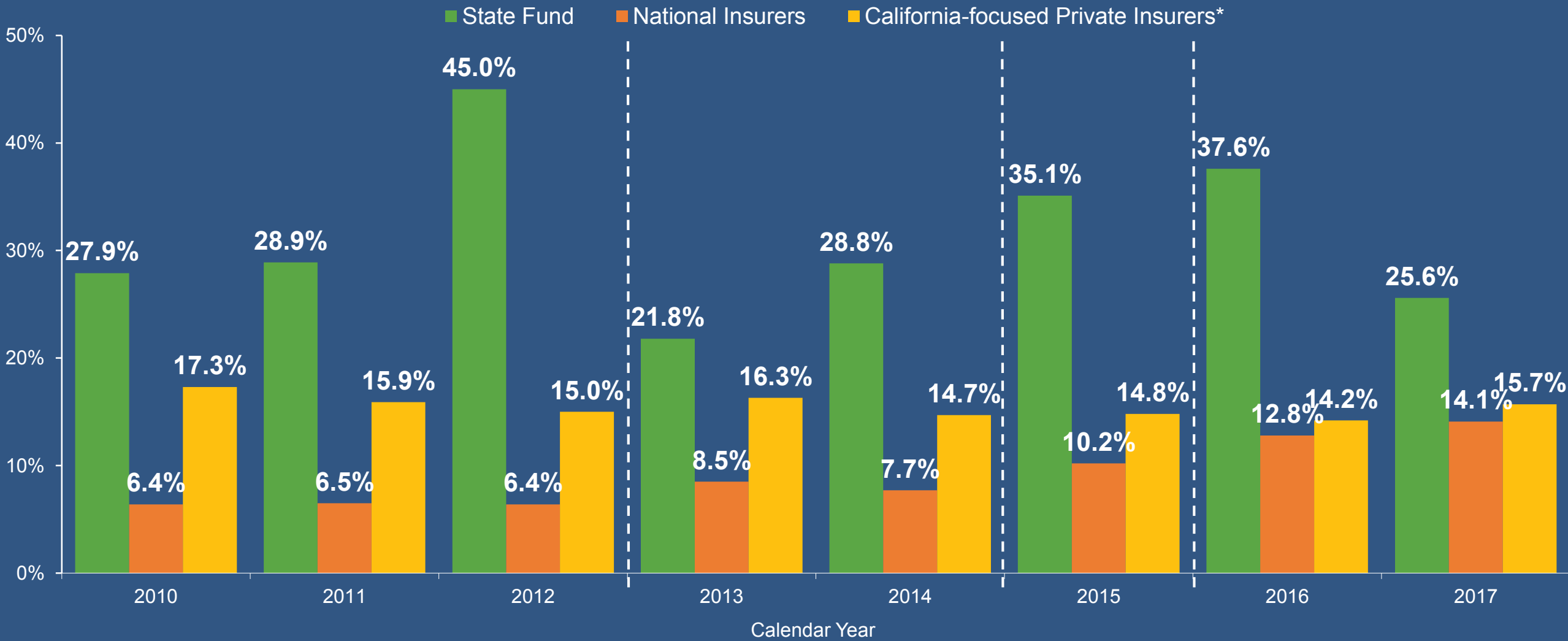
Impact of Open Count-based Apportionment Approach

As of December 31, 2017



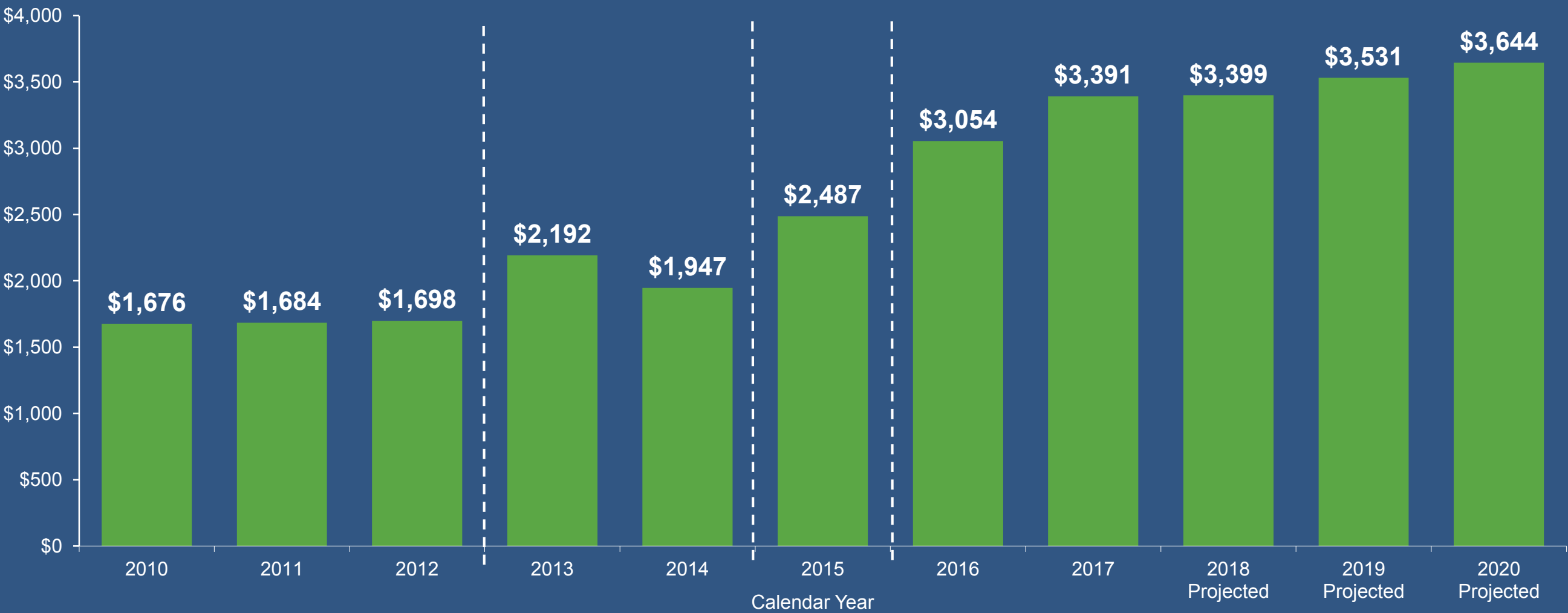
Ratios of Paid ULAE to Paid Losses (Exhibit 1)

As of December 31, 2017



Paid ULAE per Open Indemnity Claim – Private Insurers (Exhibit 2.2)

As of December 31, 2017



ULAE Projection Methodology

Open Indemnity Claim-based Projection

- Open Indemnity Claims at Beginning of Calendar Year
 - Projected using WCIRB frequency forecasts and recent reporting and closure patterns
- Calendar Year Paid ULAE per Open Indemnity Claim
 - Data based on private insurers only
 - Projected using blend of UCLA Anderson and CA Department of Finance average wage level changes
 - Changes in historical ULAE severities cannot be used until sufficient data based on the new approach is available
- Projected Policy Year 2019 ULAE
 - Trend to future CYs based on average of CYs 2016 & 2017
 - (# of open indemnity claims) X (paid ULAE per open indemnity claim)
 - Paid ULAE per open claim projected 3.3 years to approx. average ULAE payment date on 2019 policies

ULAE Projection Methodology

Paid Loss-based Projection

- Calendar Year Paid ULAE Ratio to Premium
- Paid Loss Ratio to Premium
 - Projected using paid loss development projections
- Paid ULAE Ratio to Paid Losses
 - Data based on private insurers only
 - $(\text{Paid ULAE to premium ratio}) / (\text{paid loss to premium ratio})$
 - Projected using average of CYs 2016 & 2017
- Projected Policy Year 2019 ULAE to Loss Ratio
 - $\text{Projected ULAE ratio to premium} = (\text{projected paid ULAE to paid loss ratio}) \times (\text{projected paid loss to premium ratio})$
 - Average of CYs 2019 and 2020
 - Divide by projected policy year 2019 loss ratio

Projections of ULAE to Loss

July 1, 2018 Pure Premium Rate Filing Projection

ULAE Projection Method	Statewide Using Private Insurer Average ULAE
Paid ULAE per Open Indemnity Claim Applied to the Latest Two Years	12.2%
Paid ULAE to Paid Losses Applied to the Latest Two Years	10.6%
Average of Open Indemnity Claim-based and Paid Loss-based Projections	11.4%

Policy Year 2019 Projection

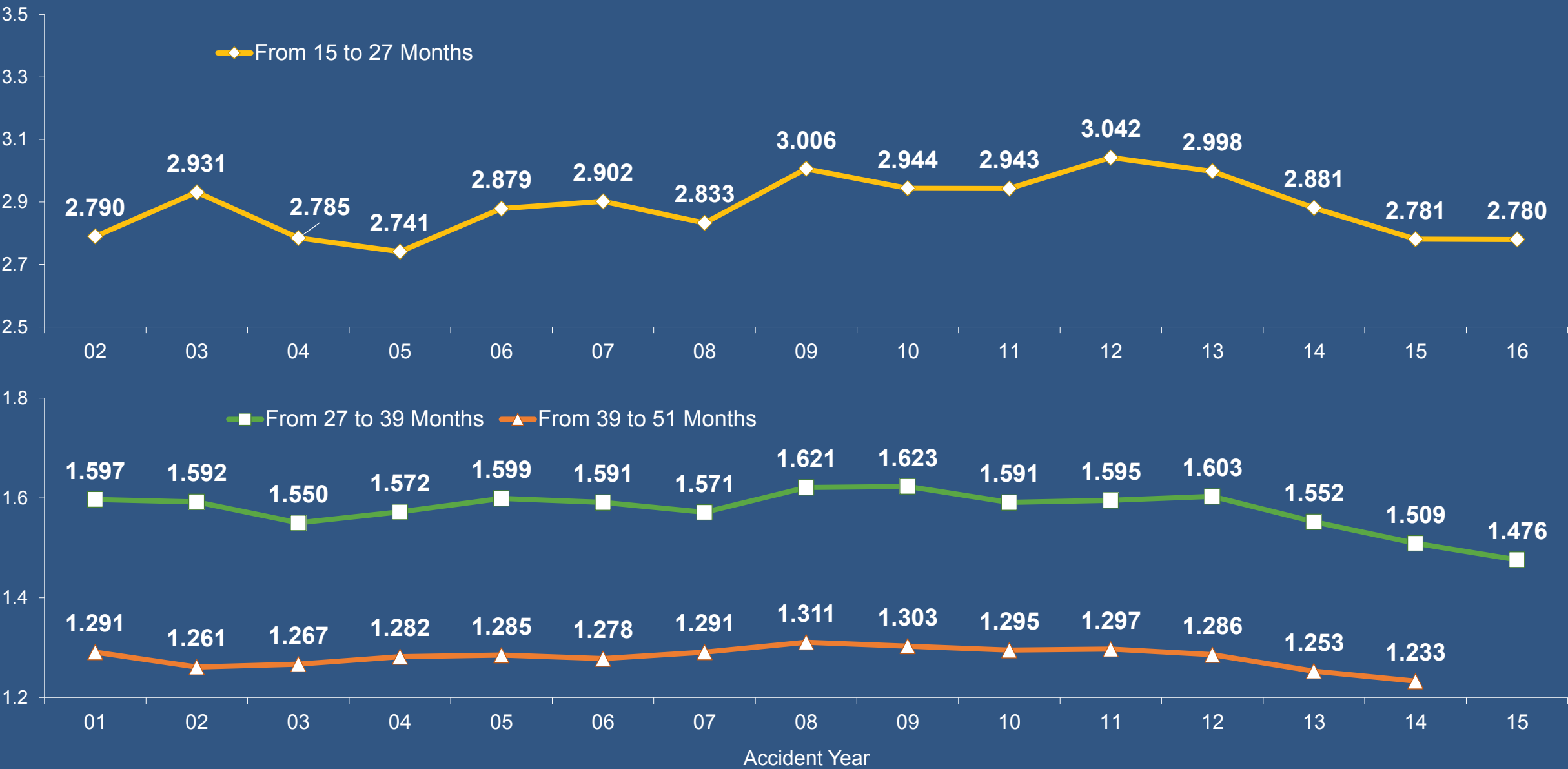
ULAE Projection Method	Statewide Using Private Insurer Average ULAE
Paid ULAE per Open Indemnity Claim Applied to the Latest Two Years	14.2%
Paid ULAE to Paid Losses Applied to the Latest Two Years	11.8%
Average of Open Indemnity Claim-based and Paid Loss-based Projections	13.0%
Projection Using Prior Paid Loss Apportionment Approach	10.7%

Projected ULAE to Loss for Policy Year 2019 Under Alternative Methods

ULAE Projection Method	Statewide Using Private Insurer Average ULAE
Average of Open Indemnity Claim-based and Paid Loss-based Projections	13.0%
Paid ULAE per Open Indemnity Claim Applied to the Latest Two Years	14.2%
Paid ULAE to Paid Losses Applied to the Latest Two Years	11.8%
Paid ULAE per Open Indemnity Claim Applied to the Latest Year	14.8%
Paid ULAE to Paid Losses Applied to the Latest Year	12.3%
Paid ULAE per Weighted Open Indemnity Claim Applied to the Latest Year	13.7%
Latest Two Calendar Year Paid ULAE to Loss Ratios	13.7%
Latest Calendar Year Paid ULAE to Loss Ratio	14.4%

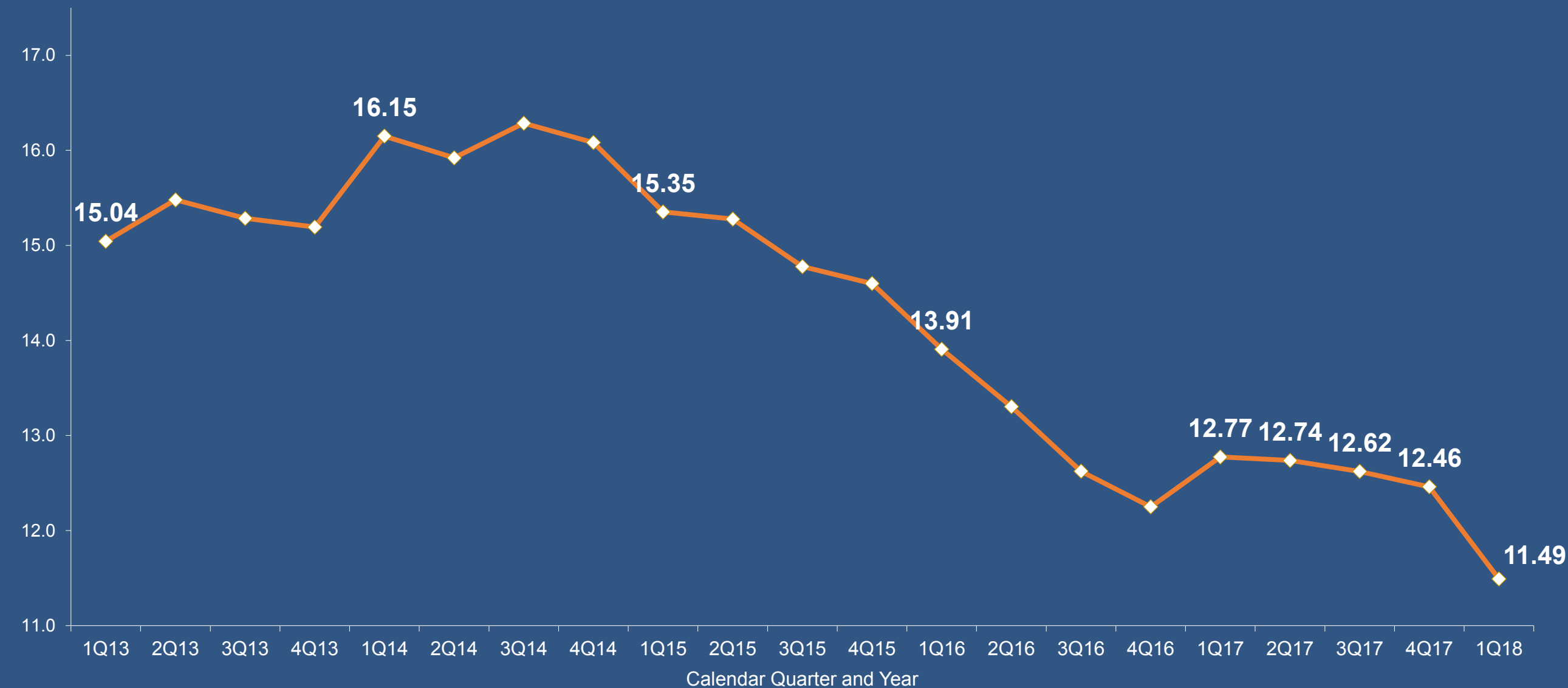
Paid ALAE Development – Private Insurers (Exhibit 13.1)

As of March 31, 2018



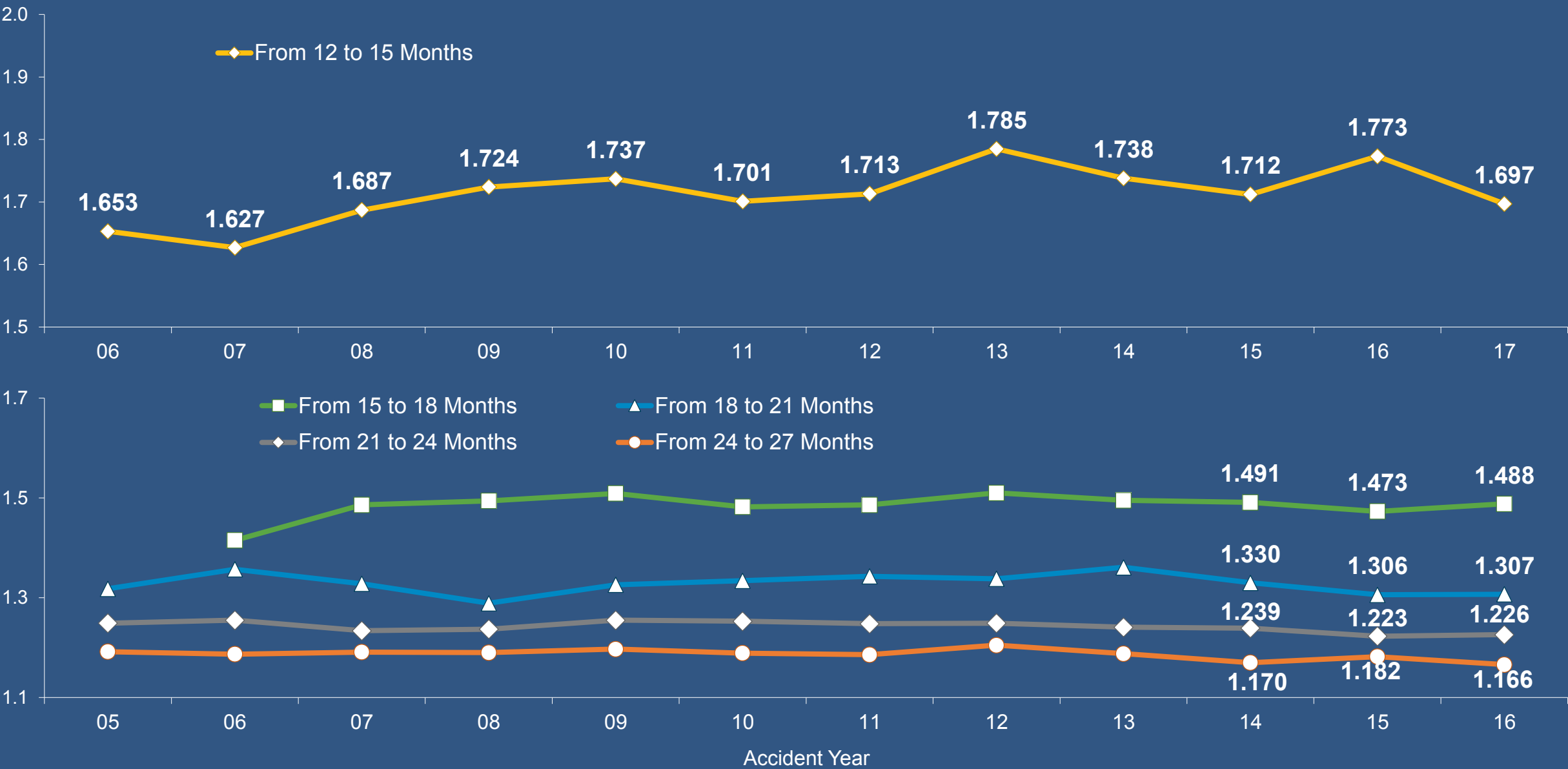
Cumulative Paid ALAE Development from 12 to 90 Months

As of March 31, 2018



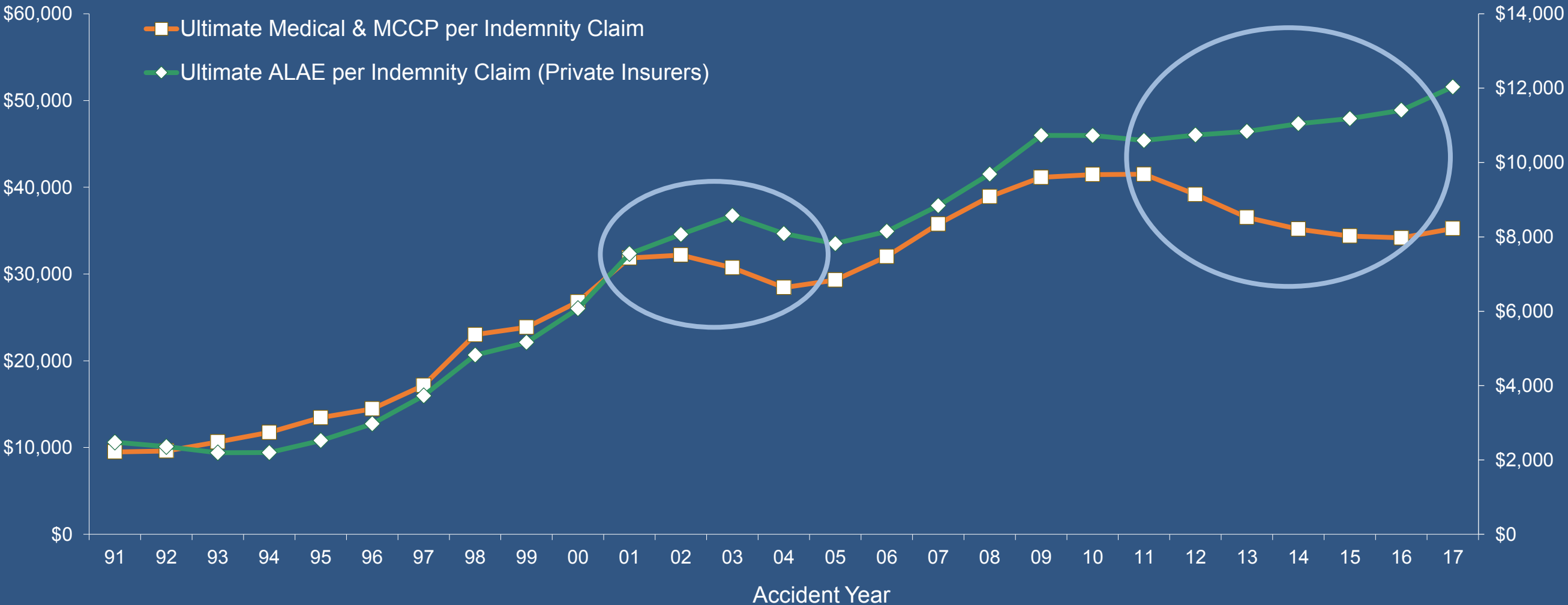
Paid ALAE Quarterly Development – Private Insurers (Exhibit 13.2)

As of March 31, 2018



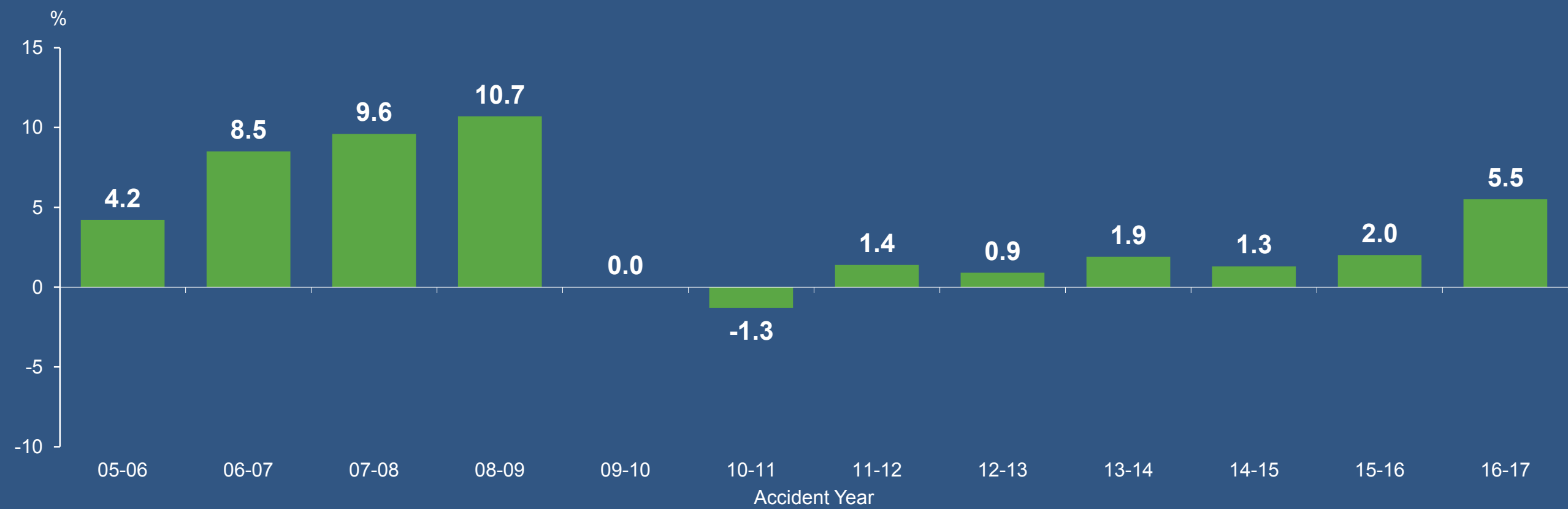
Ultimate Medical and ALAE per Indemnity Claim

As of March 31, 2018



Projected Changes in Ultimate ALAE Severity – Private Insurers (Exhibit 11.2)

As of March 31, 2018



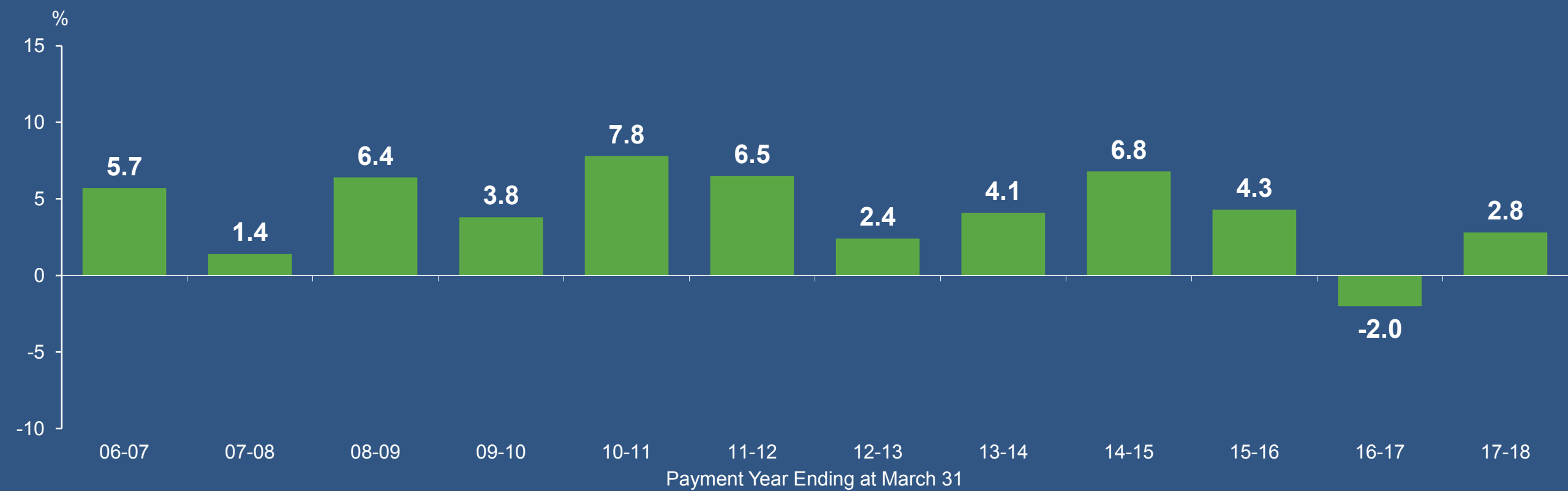
Annual Exponential Trend Based on:

2005 to 2017: +3.1%

2013 to 2017: +2.5%

Change in Incremental Paid ALAE per Open Indemnity Claim – Private Insurers (Exhibit 12)

As of March 31, 2018



Annual Exponential Trend Based on:

2006 to 2018: +4.5%

2013 to 2018: +3.1%

Agenda Selected ALAE Severity Trend: +3.5%

ALAE Projection Methodology

- Accident Year Ultimate Indemnity Claim Counts
 - Latest year development
 - Projected using WCIRB frequency forecasts
- Accident Year Ultimate ALAE per Indemnity Claim
 - Data based on private insurers only
 - Latest year development with inverse power curve tail
 - Projected using average of ultimate ALAE per indemnity claim and incremental paid ALAE per open indemnity claim for both long-term and short-term periods
- Projected Policy Year 2019 ALAE
 - (Projected # of ultimate indemnity claims) X (projected ultimate ALAE per indemnity claim)
 - Projection from latest two accident years
 - Initial projected ratio reduced by 6.4% for savings from SB 1160 & AB 1244 not yet significantly reflected in emerging ALAE costs

Projections of ALAE to Loss

July 1, 2018 Pure Premium Rate Filing Projection

ALAE Projection Method	Statewide Using Private Insurer Average ALAE
Projected Ultimate ALAE per Indemnity Claim	18.5%

Policy Year 2019 Projection

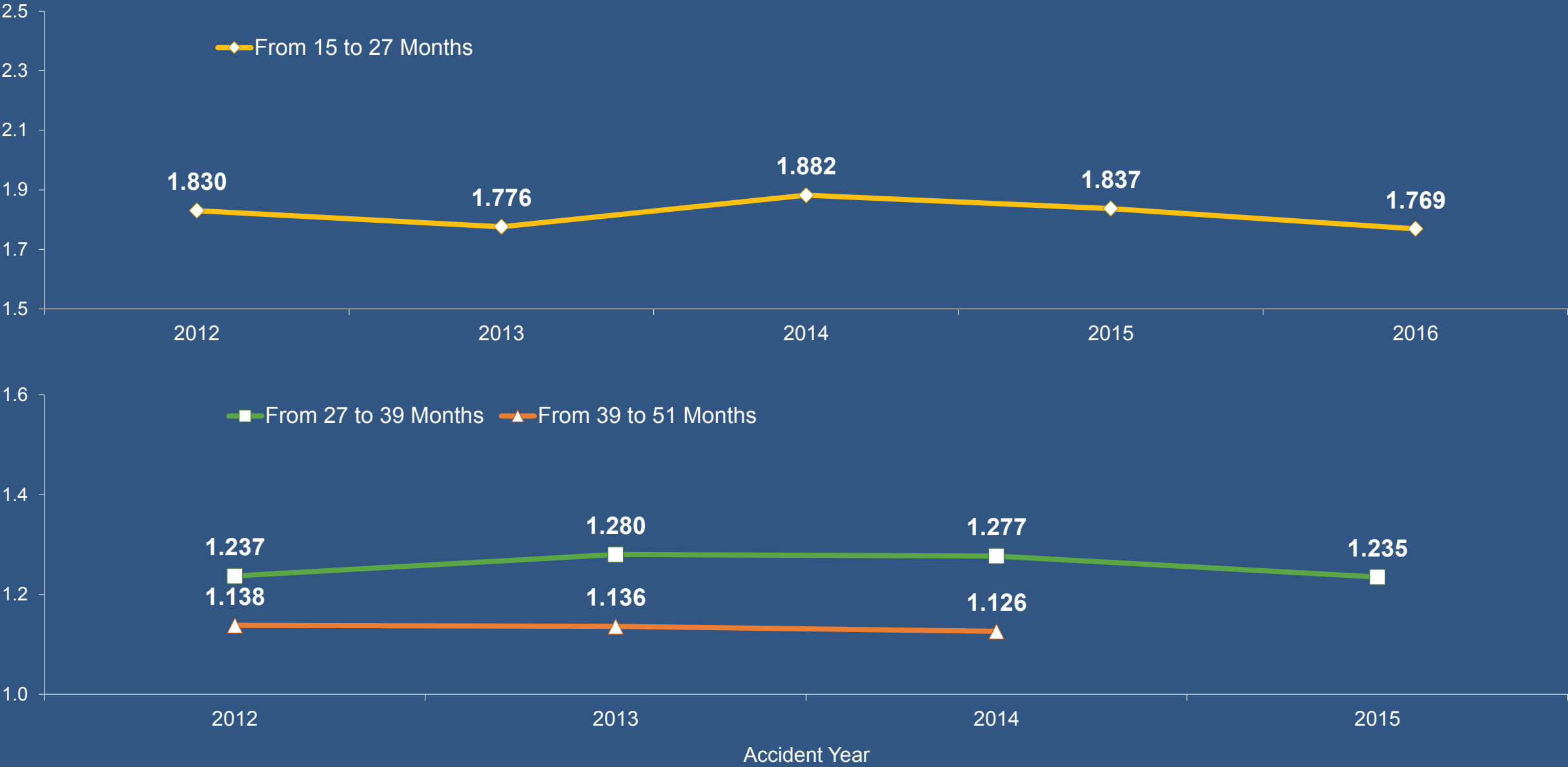
ALAE Projection Method	Statewide Using Private Insurer Average ALAE
Projected Ultimate ALAE per Indemnity Claim	17.9%

Projected ALAE to Loss for Policy Year 2019 Under Alternative Methods

ALAE Projection Method	Statewide Using Private Insurer Average ALAE
Projected Ultimate ALAE per Indemnity Claim – Trend from Latest Two Years	17.9%
Projected Ultimate ALAE per Indemnity Claim – Trend from Latest Year	18.3%
Latest Year Paid ALAE Ratio Development Compared to Losses – Trend from Latest Two Years	18.0%
Latest Year Paid ALAE to Paid Indemnity Development Compared to Losses – Trend from Latest Two Years	16.8%

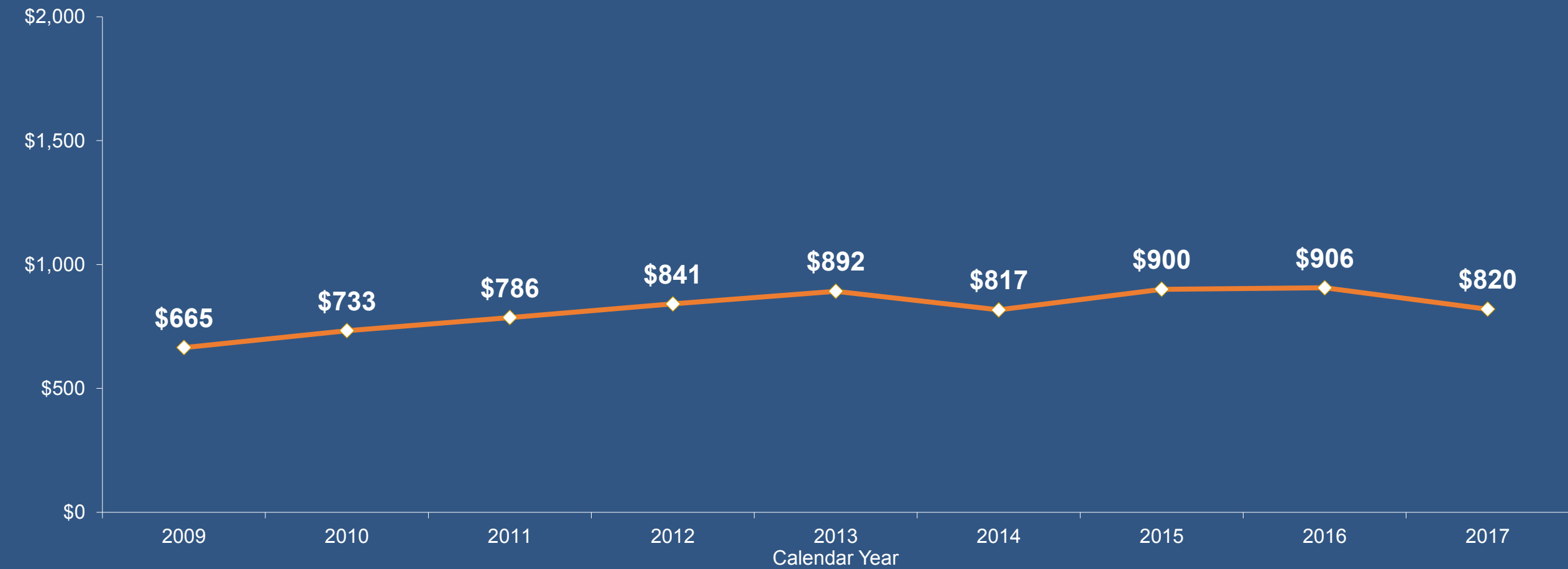
Paid MCCP Development (Exhibit 21.1)

As of March 31, 2018



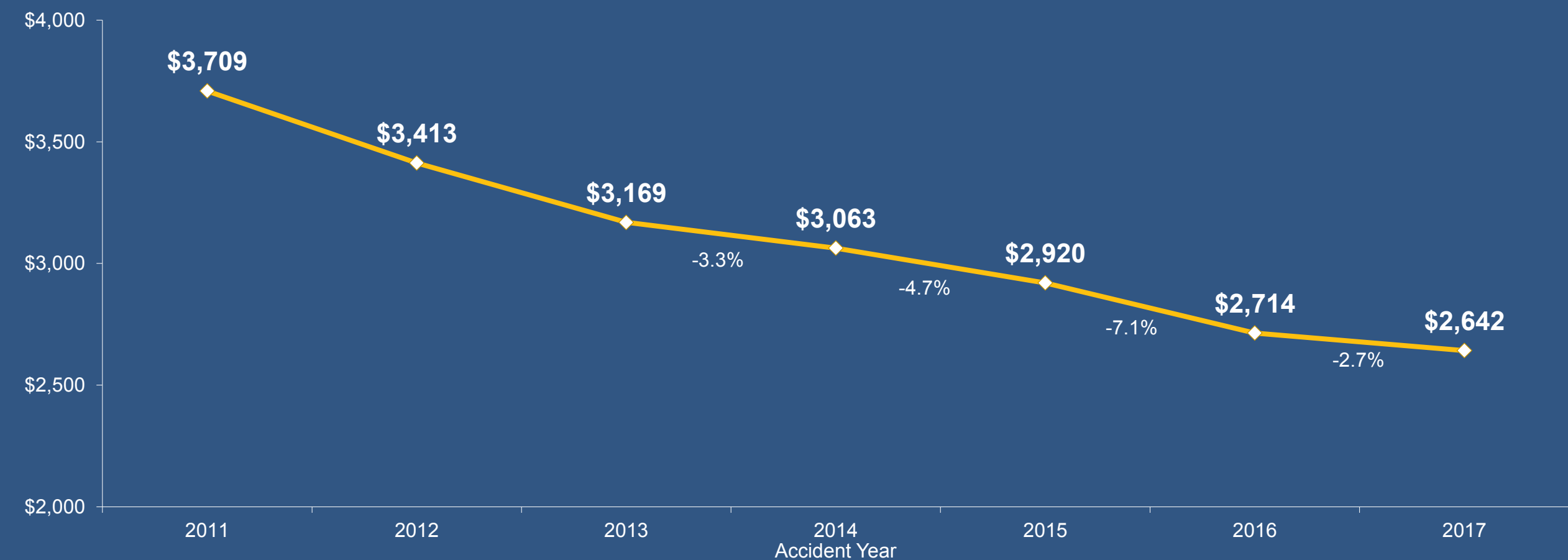
Calendar Year Paid MCCP per Indemnity Claims Inventory (Exhibit 19)

As of December 31, 2017



Annual Exponential Trend Based on:
2009 to 2017: +2.9%

Projected Ultimate MCCP per Indemnity Claim (Exhibit 20)



Annual Exponential Trend Based on:
2013 to 2017: -4.7%
Agenda Selected MCCP Severity Trend: -1.0%

MCCP Projection Methodology

- MCCP methodology based on that for ALAE
 - Statewide data used
 - Development based on latest-year paid MCCP through 75 months and paid medical after 75 months
 - Trend based on average changes in CY MCCP per open claim and ultimate AY MCCP per indemnity claim

Projections of MCCP to Loss

July 1, 2018 Pure Premium Rate Filing Projection

MCCP Projection Method	Statewide
Projected Ultimate MCCP per Indemnity Claim	4.0%

Policy Year 2019 Projection

MCCP Projection Method	Statewide
Projected Ultimate MCCP per Indemnity Claim	3.8%

Projected MCCP to Loss for Policy Year 2019 Under Alternative Methods

MCCP Projection Method	Statewide
Projected Ultimate MCCP per Indemnity Claim – Trend from Latest Two Years	3.8%
Projected Ultimate MCCP per Indemnity Claim – Trend from Latest Year	3.8%
Projected Ultimate MCCP per Indemnity Claim – Trend Based on CY Paid MCCP per Open Indemnity Claim Applied to Latest Two Years	4.3%
Projected Ultimate MCCP per Indemnity Claim – Trend Based on AY Ultimate MCCP per Open Indemnity Claim Applied to Latest Two Years	3.3%

Projections of Total LAE to Loss

July 1, 2018 Pure Premium Rate Filing Projection

LAE Component	Projection
ULAE	11.4%
ALAE Excluding MCCP	18.5%
MCCP	4.0%
Total LAE	33.9%

Policy Year 2019 Projection

LAE Component	Projection
ULAE	13.0%
ALAE Excluding MCCP	17.9%
MCCP	3.8%
Total LAE	34.7%



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