

WCIRB Actuarial Committee Meeting

April 3, 2018

Agenda

1. **Diagnostics – Claims Working Group Feedback**
2. **AC17-04-04: New Drug Formulary**
3. **AC18-04-04: Impact of Medical Fraud Enforcement**
4. **AC18-03-02: 12/31/2017 Experience – Review of Methodologies**
5. **AC18-04-01: 12/31/2017 Loss Adjustment Expense Experience Review**
6. **AC18-04-03: Impact of the Affordable Care Act on California Workers' Compensation**

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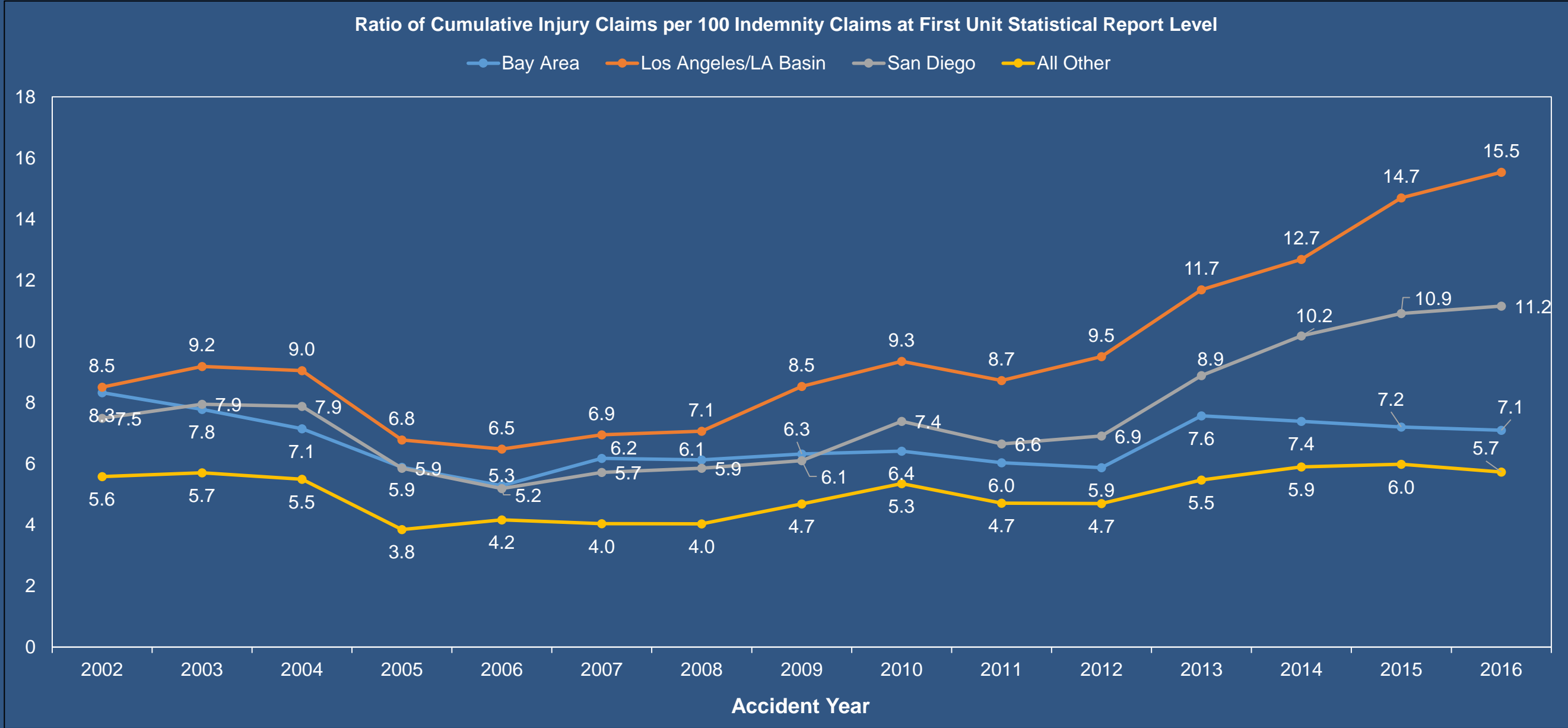
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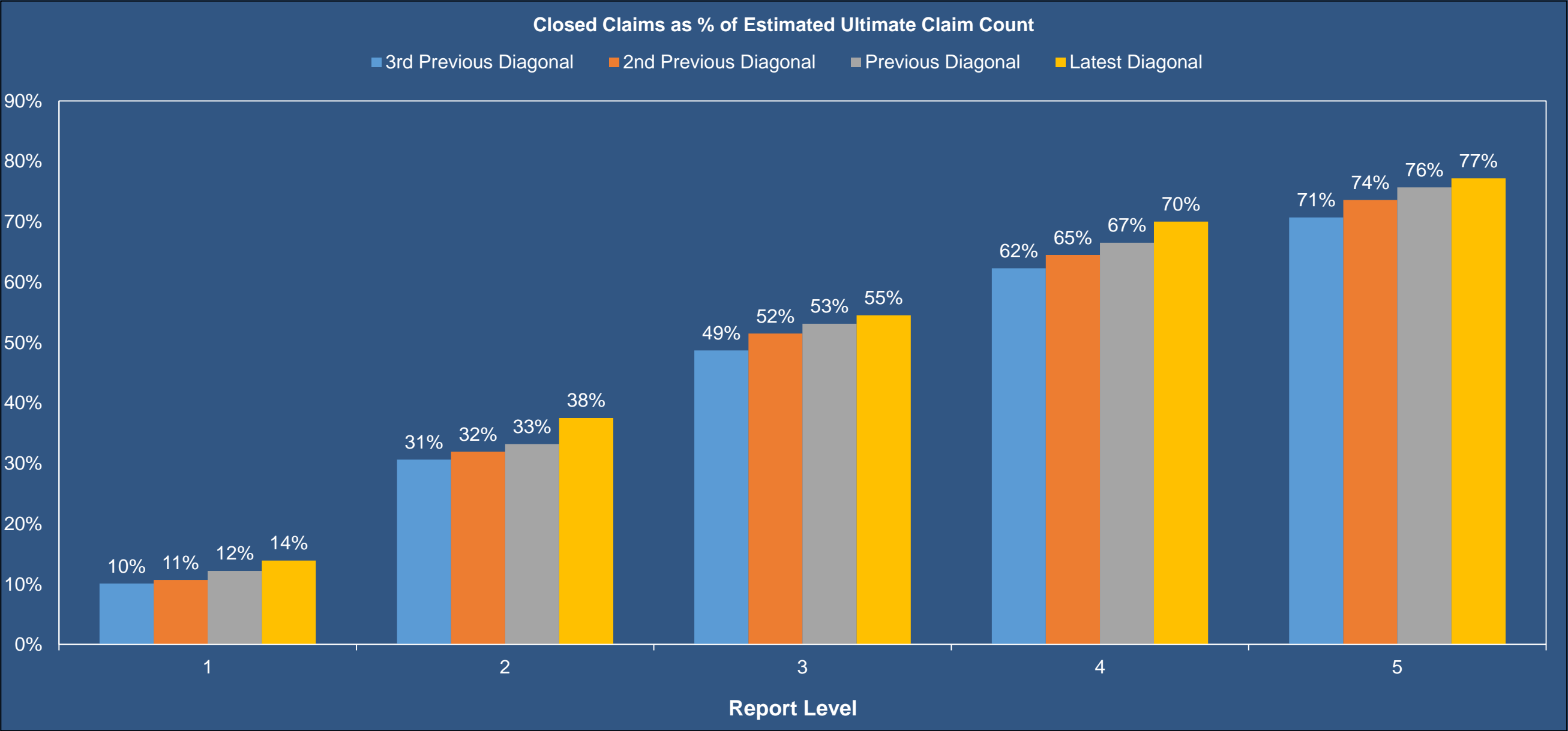
Diagnostics – Claims Working Group Feedback



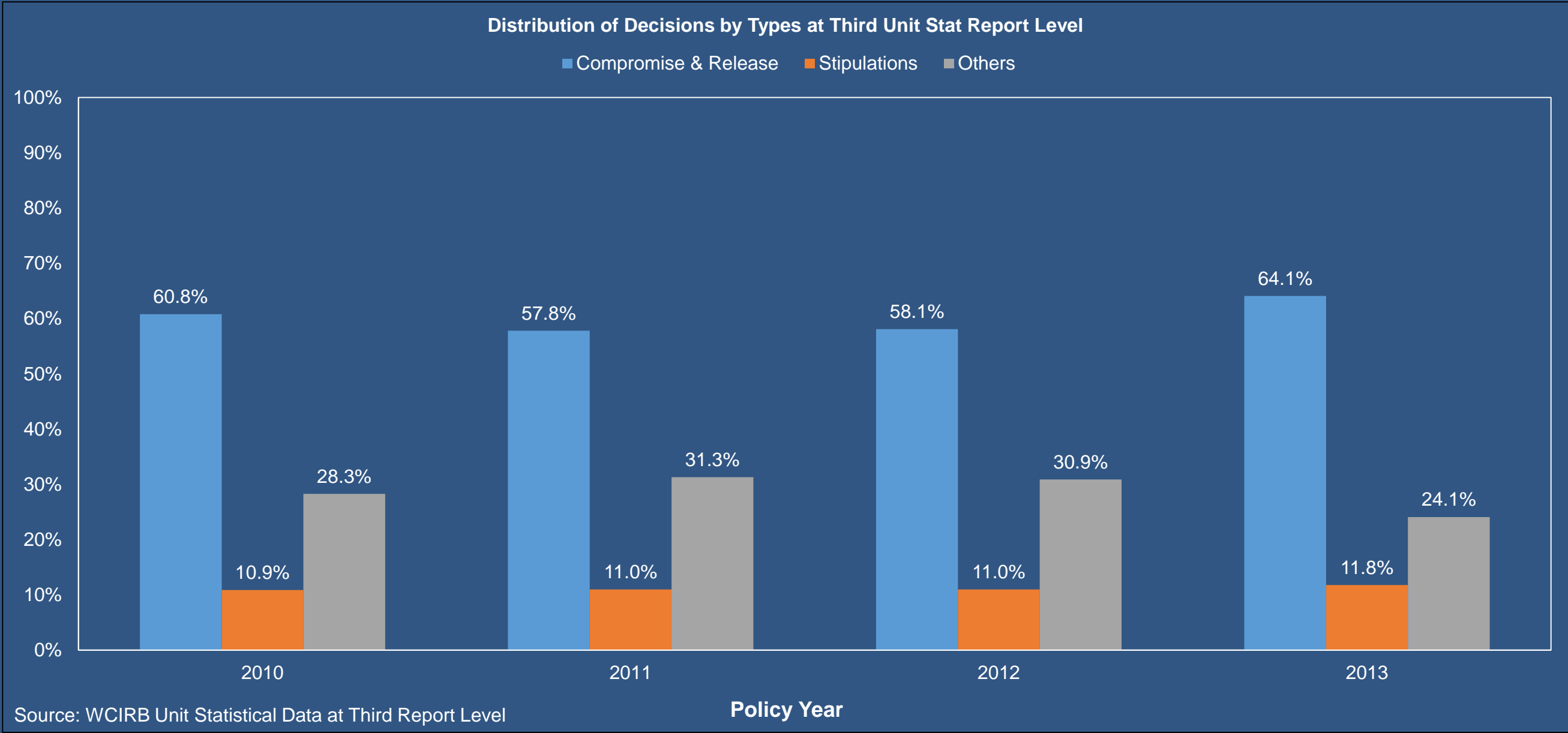
Cumulative Injury Claim Count Ratios



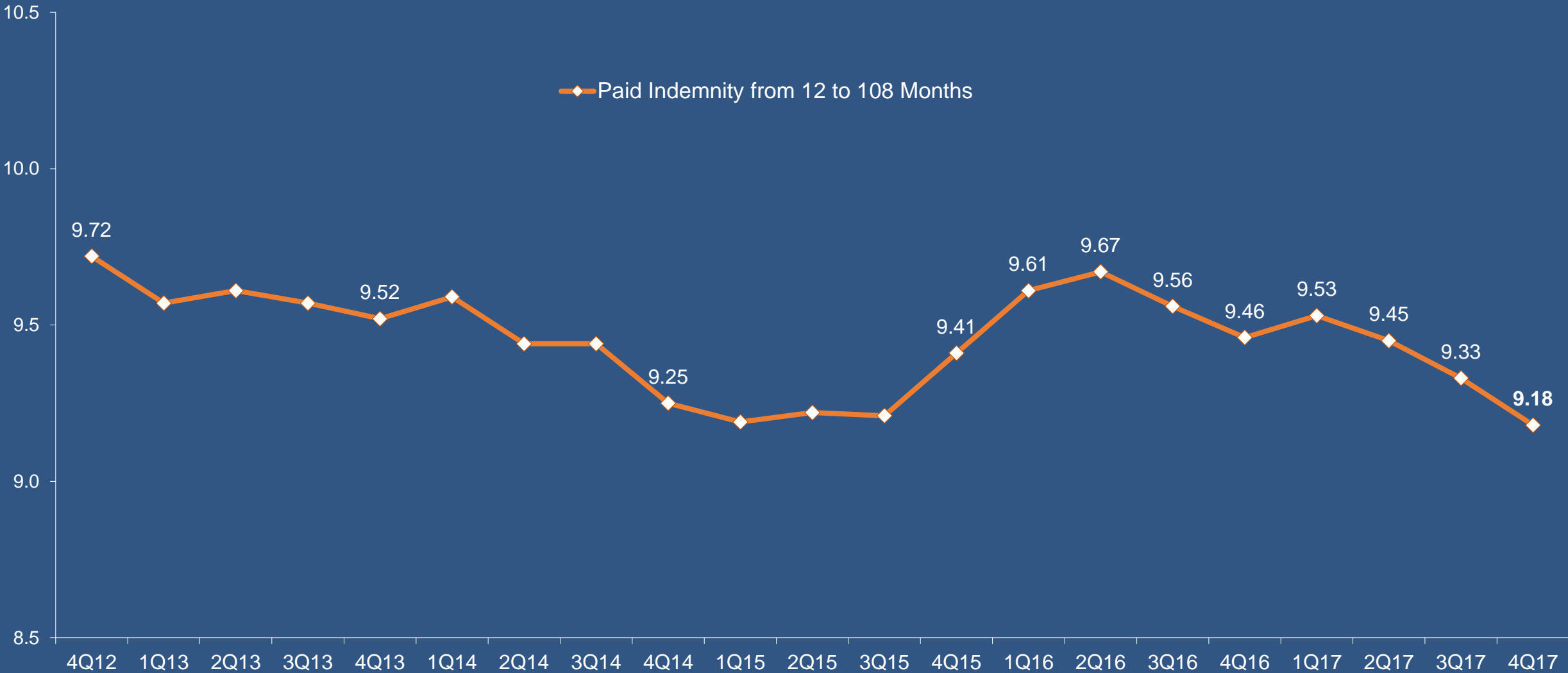
Percent Closed – Permanent Indemnity



Settlement Type Distribution

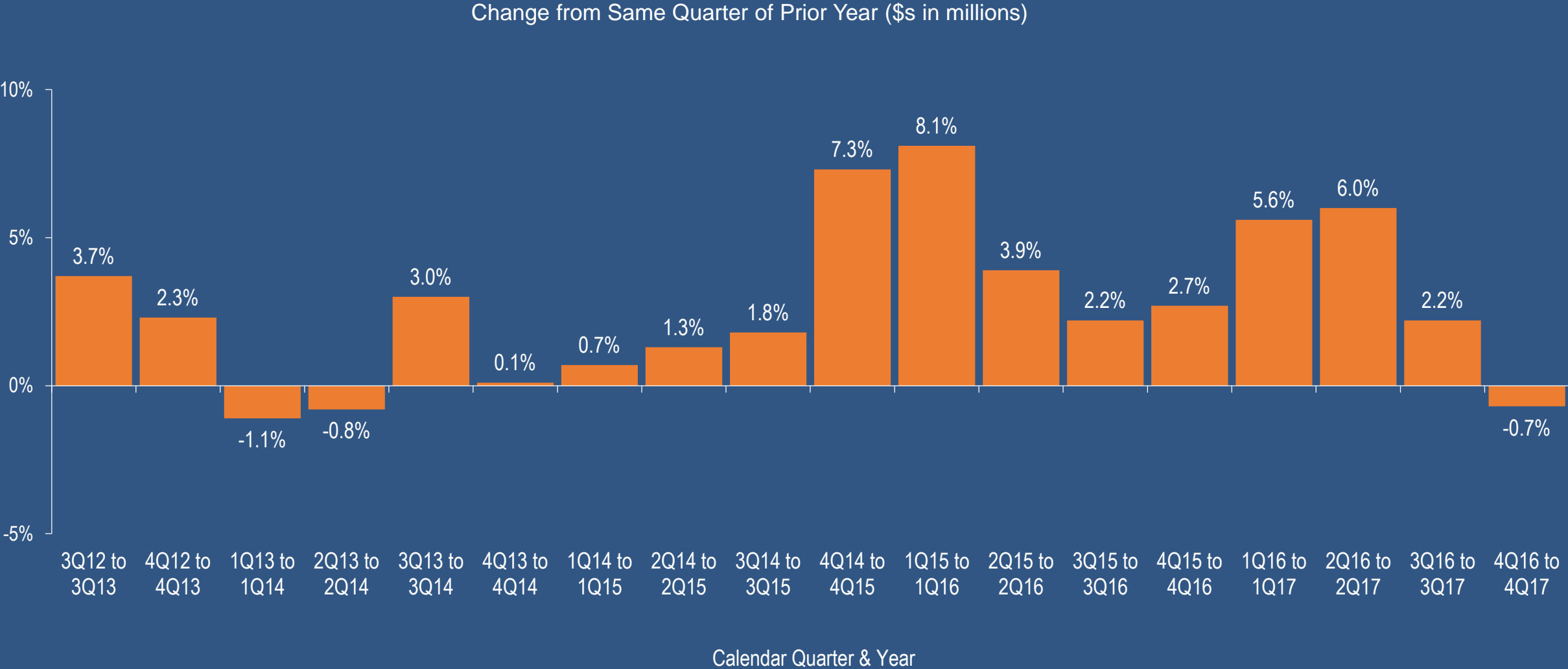


Cumulative Paid Indemnity Development from 12 to 108 Months



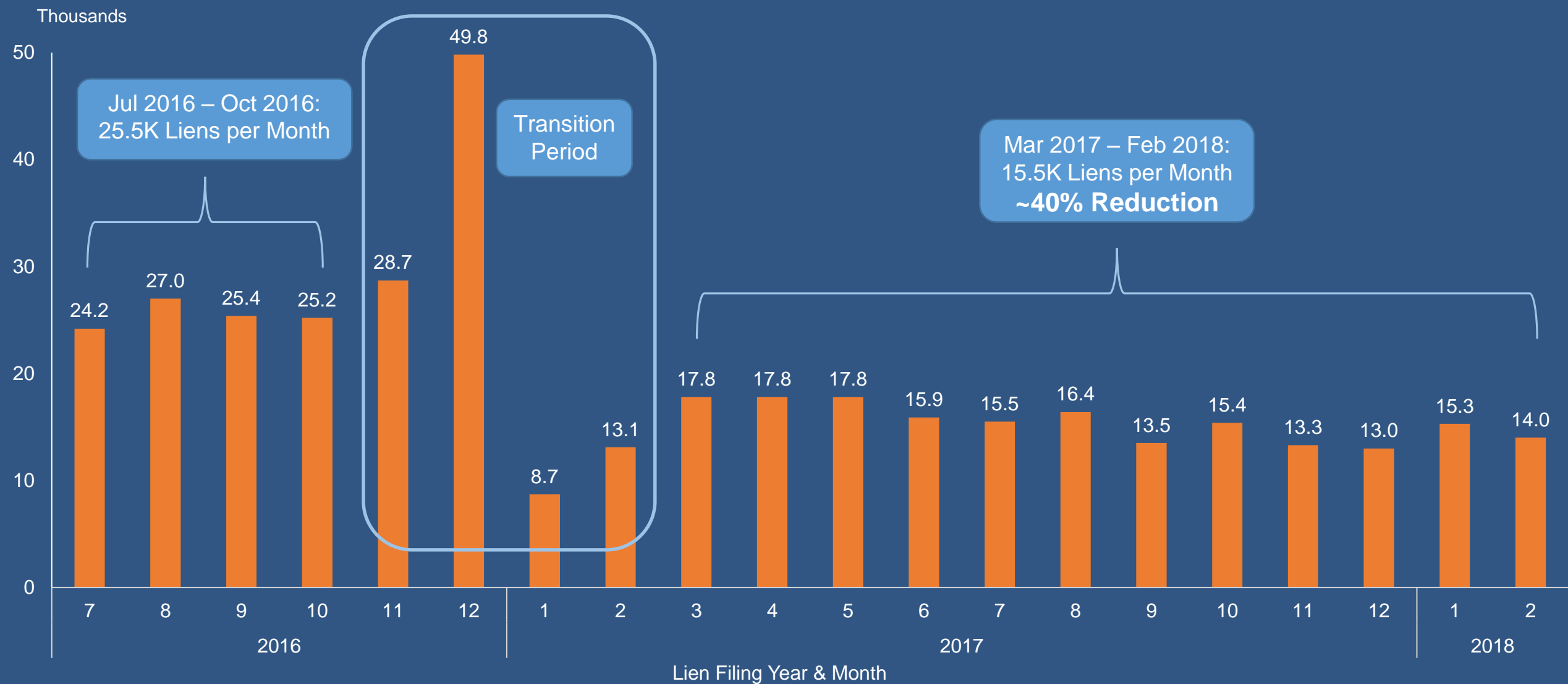
Source: Quarterly Data Calls

Change on Total Indemnity Payments



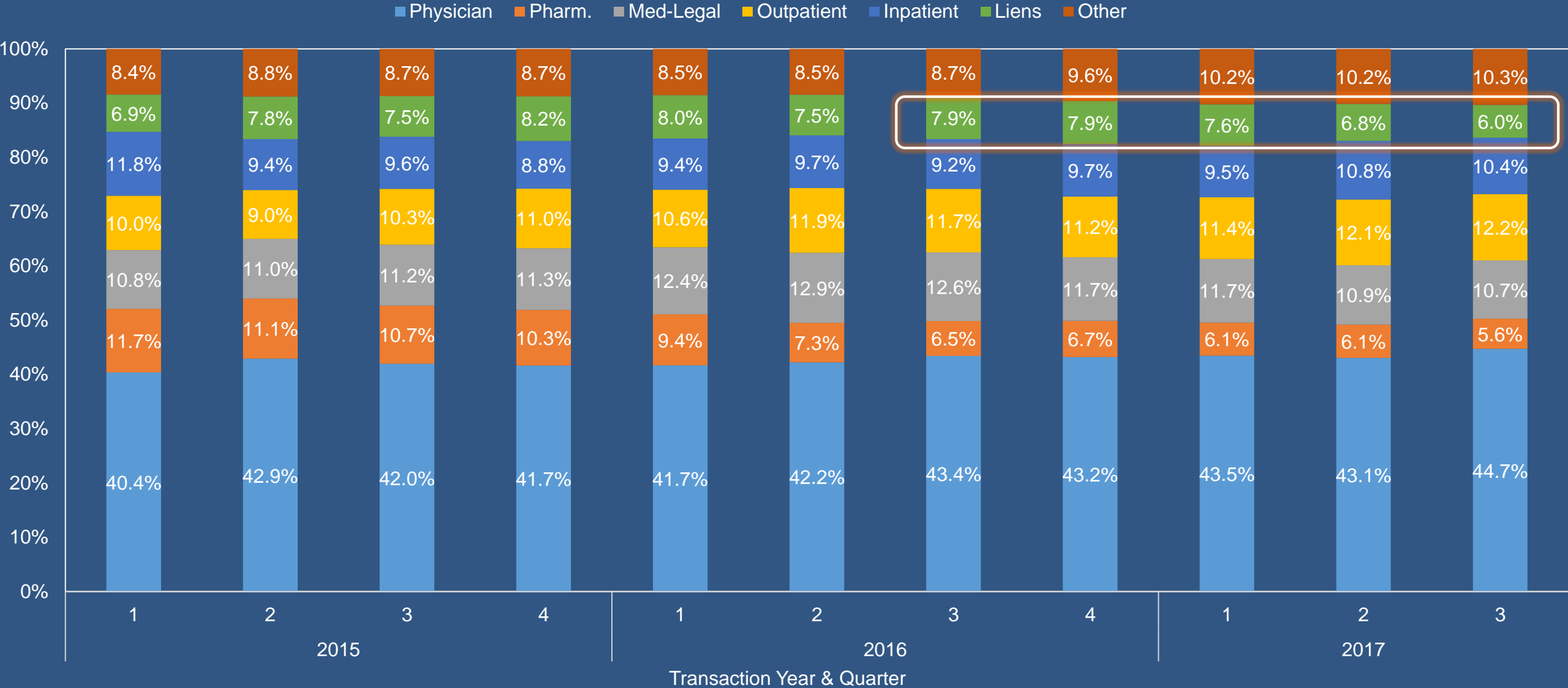
Source: Quarterly Data Calls

Recent Lien Filings

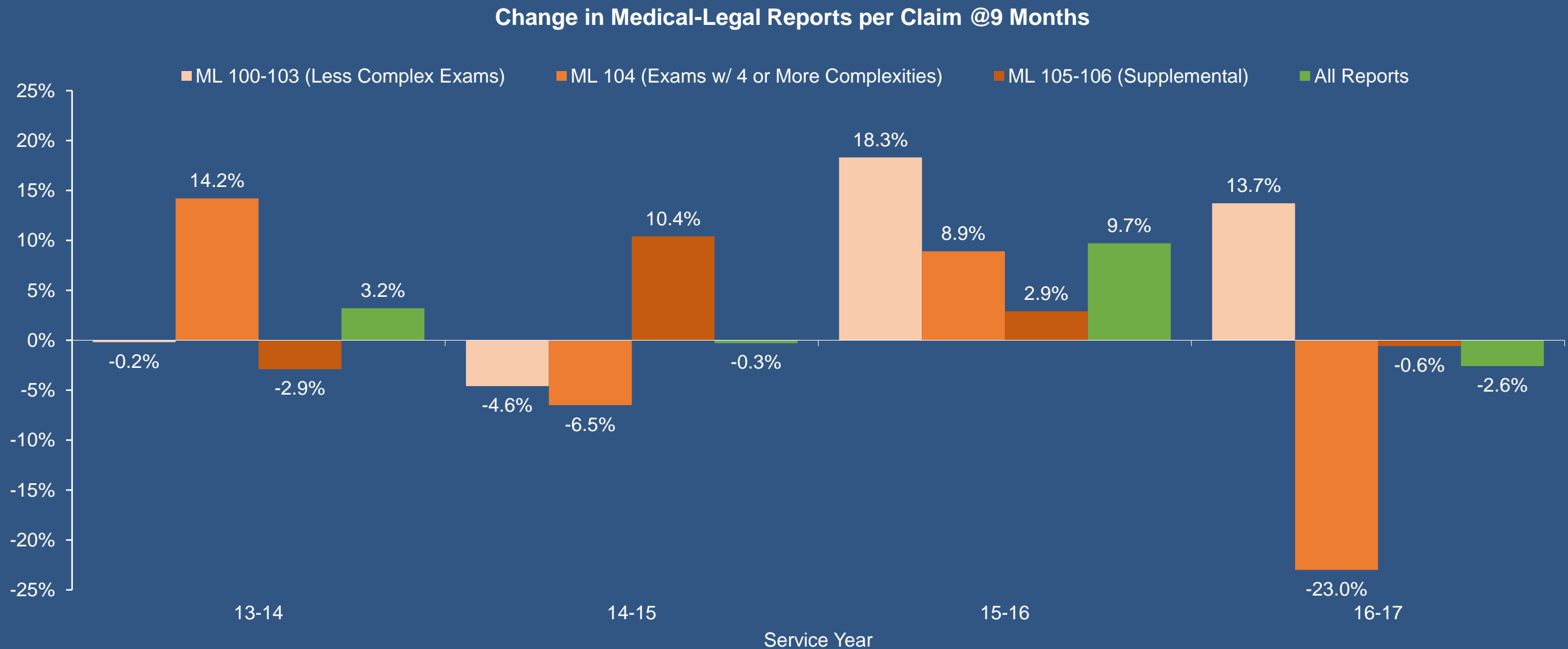


Source: DWC EAMS data.

Proportion of Medical Paid by Category



Change in Medical-Legal Costs



Source: WCIRB Medical Data Call

02

New Drug Formulary



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Summary of Presentation

- Background and Introduction
- Summary of the 2018 MTUS Drug Formulary
- Estimated Impact on Frictional Costs (UR & IMR)
- Estimated Impact on Pharmaceutical Costs

Background

- AB 1124 requires the DWC to adopt an evidence-based drug formulary in the California workers' compensation system.
- Primary goals of the Formulary:
 - Regulate prescribing of opioids
 - Reduce frictional costs (from UR and IMR) in the system
 - Ensure medically necessary and timely medications for injured workers
- The new MTUS Drug Formulary became effective January 1.

The MTUS Drug Formulary

- Structure:
 - ACOEM treatment guidelines – the backbone
 - MTUS Drug list – guides the prospective utilization review (UR) requirements (exempt & non-exempt)
 - Ancillary Formulary Rules (special fill, perioperative fill, physician dispensing, generic/brand selection, etc.)
- Applies to drugs dispensed after 1/1/2018 for all injuries
- SB 1160 restrictions on UR in the first 30 days linked to new formulary

Source: Medical Treatment Utilization Schedule – Drug Formulary presentation at the DWC Educational Conference 2018; New UR rules presentation at the same conference.

Summary of the MTUS Drug Formulary

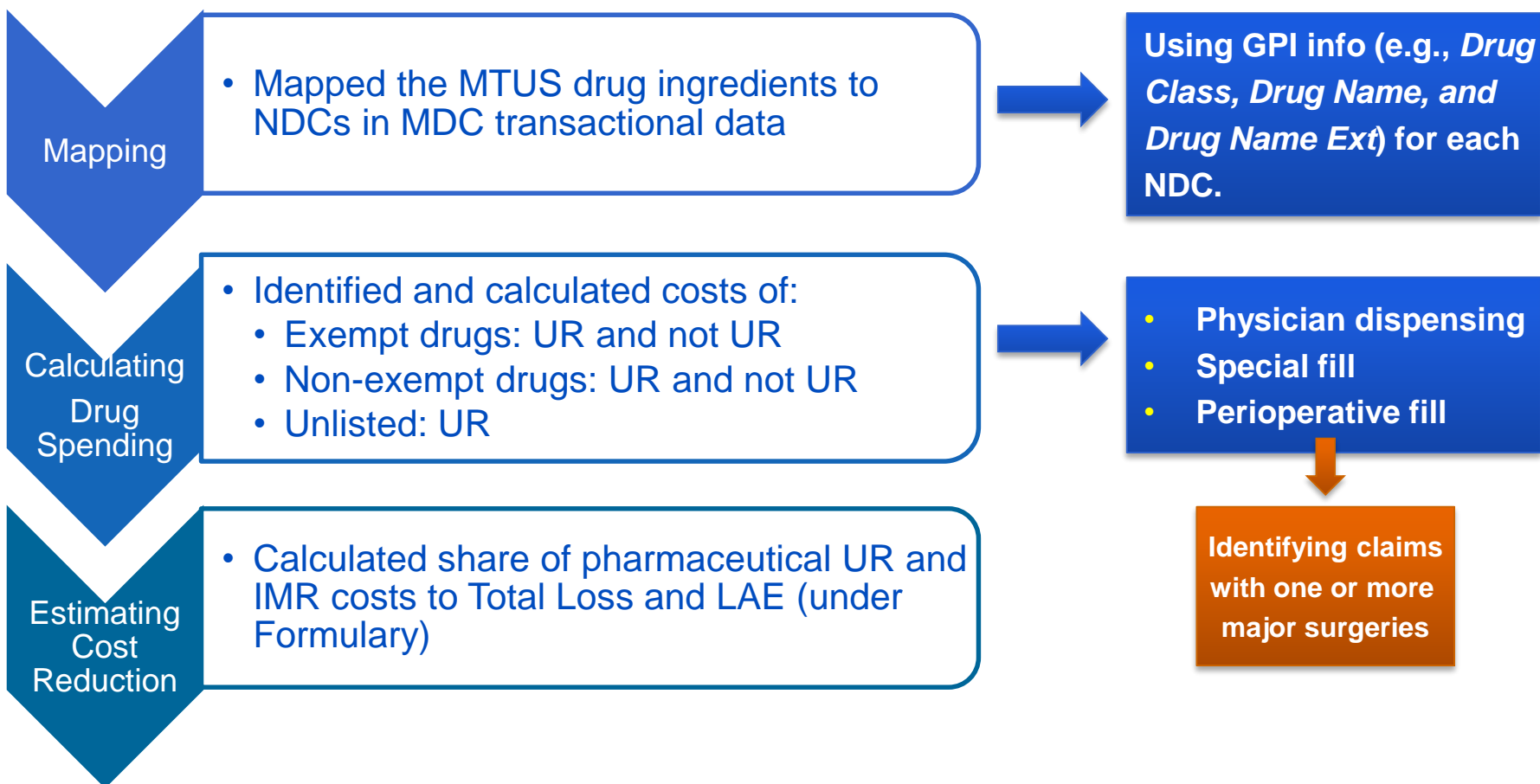
Exempt drugs	No Prospective UR if use is consistent with MTUS
Non-Exempt drugs	Subject to UR, including all opioids and compounds
Unlisted drugs	Subject to UR, including combination drugs
Special fill policy	No Prospective UR on non-exempt drugs prescribed at single initial visit within 7 days of DOI
Perioperative fill policy	No Prospective UR on non-exempt drugs for post-surgery care (4 days before and 4 days after)
Physician dispensing	Subject to UR except on a one-time basis for “exempt drugs” and special fill & perioperative fill
Brand/Generic selection	Prospective authorization for brand name drugs when a less costly generic equivalent exists
Compounds	Prospective authorization before dispensing
Off-label use	No Prospective UR if exempt drugs and the use follows MTUS
45-day rule	Request for authorization to address treatment with non-exempt and unlisted drugs for injured workers (DOI <1/1/2018)

WCIRB's Analysis of Cost Impact of New Formulary

- Impact on Frictional Costs (UR & IMR)
- Potential Impact on Pharmaceutical Costs:
 - Pharmaceutical Costs Dropping Sharply (10.3% of Total Medical Paid in 2016, Medical Cost 43% of Loss and LAE)
 - Areas Likely Impacted:
 - Opioids
 - Compounded drugs
 - Physician-dispensed drugs
 - Brand name drugs
 - Quantifying the Current Cost of these Components
 - Estimating the Impact of the Formulary on these Components

Approach for Estimating Impact on Frictional Costs

- Analyzed the MDC transactional data with:
 - Service dates: July 1, 2016 to June 30, 2017 as of January 7, 2018
- Used WCIRB's MDC data to evaluate the potential cost saving:



Overview of the WCIRB MDC Pharmaceutical Data

- Service Dates 07/01/2016 to 06/30/2017

- 13,872 NDCs and about 1.4 million drug transactions matched to MTUS listed drug ingredients

Rank	Drug Group	% of Total Drug Payments	% Exempt	% Non-Exempt	% of Unlisted
1	Analgesics – opioid	18.7%	0.0%	99.1%	0.9%
2	Dermatologicals	15.6%	20.1%	31.4%	48.4%
3	Analgesics - anti-inflammatory	15.0%	89.9%	5.5%	4.6%
4	Anticonvulsants	10.4%	0.0%	28.6%	71.4%
5	Musculoskeletal therapy agents	6.8%	0.0%	77.8%	22.2%
6	Ulcer drugs	5.7%	97.5%	0.0%	2.5%
7	Antidepressants	3.8%	0.0%	90.2%	9.8%
8	Antipsychotics/anti-manic agents	1.5%	0.0%	0.0%	100.0%
9	Cardiovascular agents - misc.	1.5%	0.0%	0.0%	100.0%
10	Anti-asthmatic and bronchodilator agents	1.4%	10.0%	43.2%	46.8%

Share of Paid Pharmaceutical Transactions by Category and Service Date Relative to Date of Injury

Service dates July 1, 2016 to June 30, 2017 as of January 7, 2018

Drug Formulary Group	Within 7 days of DOI		After 7 days of DOI		Total	
	Subject to UR	Not Subject to UR	Subject to UR	Not Subject to UR	Subject to UR	Not Subject to UR
Exempt	0.0%	8.8%	8.9%	19.0%	8.9%	27.8%
Non-Exempt	1.8%	2.5%	41.4%	0.9%	43.2%	3.4%
Unlisted	2.3%	0.0%	14.5%	0.0%	16.8%	0.0%
Total	4.1%	11.3%	64.8%	19.9%	68.8%	31.2%

Share of Paid Pharmaceuticals by Category and Service Date Relative to Date of Injury

Service dates July 1, 2016 to June 30, 2017 as of January 7, 2018

Drug Formulary Group	Within 7 days of DOI		After 7 days of DOI		Total	
	Subject to UR	Not Subject to UR	Subject to UR	Not Subject to UR	Subject to UR	Not Subject to UR
Exempt	0.0%	2.9%	8.6%	11.5%	8.6%	14.3%
Non-Exempt	0.5%	0.5%	37.9%	0.4%	38.4%	0.9%
Unlisted	1.5%	0.0%	36.3%	0.0%	37.7%	0.0%
Total	2.0%	3.4%	82.8%	11.8%	84.8%	15.2%

Potential Impact of the MTUS Drug Formulary

Estimated Reduction in UR Costs

(1)	Medical Cost Containment Program (MCCP) Costs as a % of the Total Loss and LAE (WCIRB 1/1/18 Filing)	3.2%
(2)	UR costs as a % of Total MCCP Costs (CWCI)	53%
(3)	Pharmaceutical UR as a % of all UR (CWCI)	43%
(4)	% of Pharmaceutical UR on Exempt Drugs (CWCI)	22.5%
(5)	% Exempt Drugs Co-Prescribed with Non-Exempt Drugs (CWCI)	60%
(6)	% of Pharmaceutical UR on Non-Exempt Drugs via special fill policy (CWCI)	1.6%
(7)	% of Pharmaceutical UR on Non-Exempt Drugs via perioperative fill policy (CWCI)	1%
(8)	Estimated Reduction in UR Costs as % of Loss & LAE (1) X (2) X (3) X [(4) X [1-(5)] + (6) + (7)]	0.1%

Impact of the MTUS Drug Formulary

Estimated Reduction in IMR costs

(1)	IMR costs as % of the Total Loss and LAE (WCIRB SB 863 Cost Monitoring)	0.3%
(2)	Pharmaceutical IMR as a % of all IMR (CWCI)	48%
(3)	% of Pharmaceutical IMR on Exempt drugs (CWCI)	21.4%
(4)	% Exempt Drugs Co-Prescribed with Non-Exempt Drugs (CWCI)	60%
(5)	Estimated Reduction in IMR Costs as % of Loss & LAE (1) X (2) X (3)X [1- (4)]	0.01%

Impact of the MTUS Drug Formulary

Estimated Increase in Pharmaceutical Costs Due to Restrictions on Prospective UR

(1)	Pharmaceutical Costs as % of the Total Loss and LAE (WCIRB)	4.4%
(2)	% of Pharmaceutical Costs on Exempt Drugs (WCIRB)	14%
(3)	% Exempt Drugs Co-Prescribed with Non-Exempt Drugs (CWCI)	60%
(4)	Exempt Drugs Costs as % of the Total Loss and LAE (1) X (2) x [1 – (3)]	0.2%
(5)	% of All Medical Services Denied by UR (CWCI)	4.3%
(6)	Estimated Increase in Pharmaceutical Costs as % of Loss & LAE (4) x (5)	0.01%

Approach for Estimating Formulary Impact on Pharmaceutical Costs

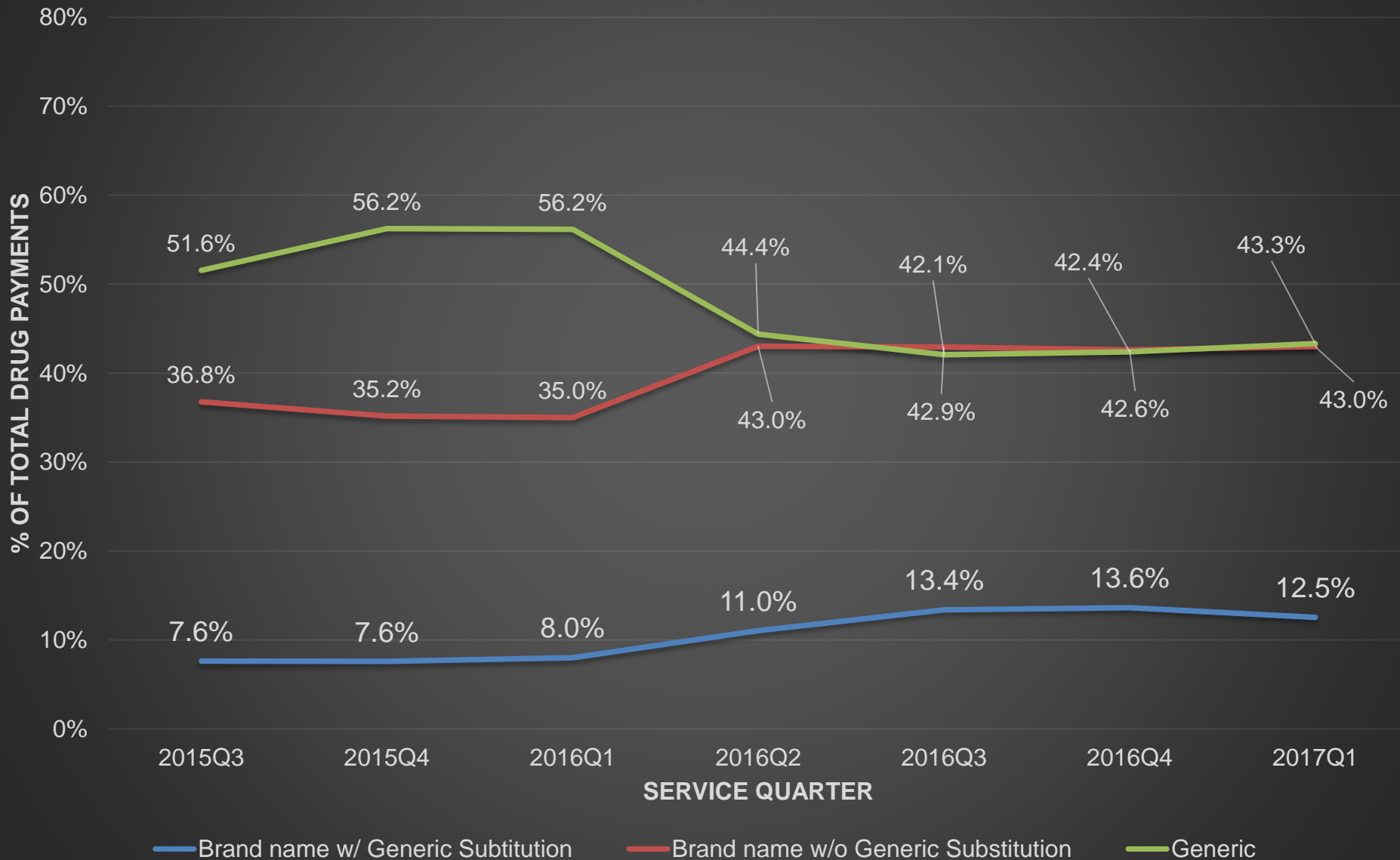
- Analyzed the MDC Transactional Data
 - Service dates: 3Q2015 through 2Q2017*
 - California zip codes (~77%)
- Validated Place of Service
 - Identified and validated the site of service with reported Place of Service codes to analyze costs of physician dispensing
- Estimated Cost of Various Drug Components Likely to be Impacted
 - Opioids (TG65)
 - Compound Drugs Excluding Opioids (TG96, TG98 or TG90 with any other drugs on the same bill)
 - Brand-name Drugs when a Generic Equivalent is Available
 - Physician-Dispensed Drugs
 - Exempt drugs > 7 days of DOI
 - Non-exempt drugs (excluding opioids, compounds, special fill and perioperative fill)

* Drug prescriptions in the transaction quarter subsequent to the service quarter were counted.

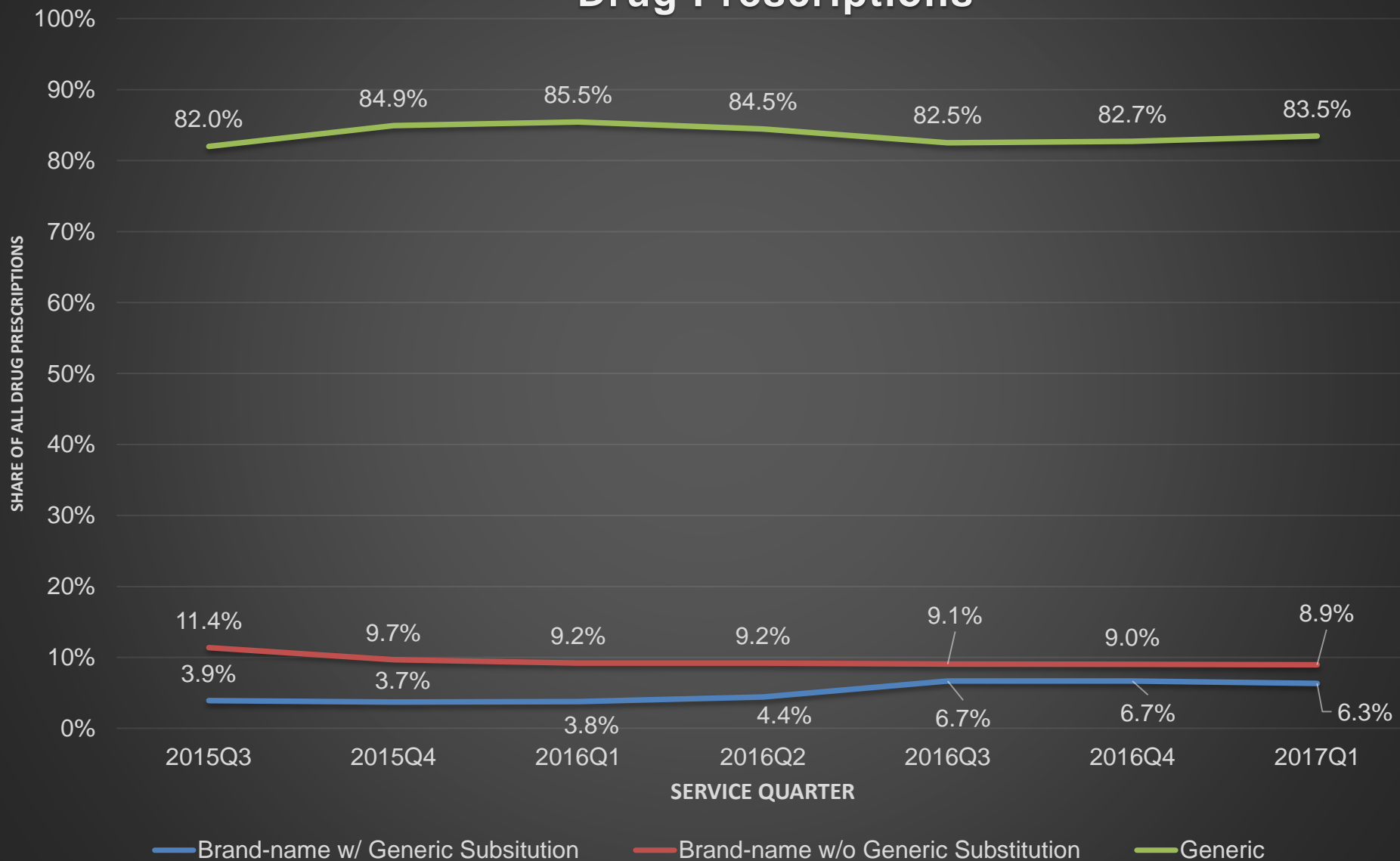
Summary of Share to Total Drug Payments by Prescribing Category in 1st Quarter 2017

Prescribing Category	Share of Total Drug Payments
Opioids	17.5%
Compounds	2.1%
Physician-dispensed drugs subject to UR	27.5%
Brand drugs with generic alternative	12.5%

Share of Generic vs. Brand Name Drug Payments to Total Drug Payments



Share of Generic vs. Brand Drug Prescriptions to All Drug Prescriptions



RAND Study on Economic Impact of the Formulary

- The DIR contracted with RAND to estimate the likely impact of the proposed Drug Formulary
- RAND analyzed the prescription drug utilization data from the WCIS with some adjustments
- Adjustments were informed by a review of the literature on the effects of formularies on prescription drug utilization as well as by RAND's expert opinion
- Sensitivity analyses to validate assumptions

RAND Study Assumptions on Formulary Impact

RAND's Module	RAND's Assumptions	WCIRB's Estimate of Current Share of Total Drug Costs
Physician dispensing of drugs subject to UR	<ul style="list-style-type: none"> • 20% of prescriptions not written • 40% of prescriptions transitioned to pharmacy dispensing 	27.8%
Generic substitution	50% brand name drugs transitioned to generic alternatives in the same active ingredient	12.5%
Compounded drugs	A 20% reduction in utilization (i.e., bill lines)	2.1%
Exempt drugs	A 20% increase in utilization (i.e., bill lines)	23.0%
Prospective Review (PR) of non-exempt and unlisted drugs	An overall 26% reduction in prescriptions: <ul style="list-style-type: none"> • ~19% transitioned to exempt alternatives • ~7% not written 	76.1%
Opioids	A 27% reduction in payments	17.5%

Source: *Modeling the Economic Impact of a California Workers' Compensation Formulary*. RAND.Mulcahy A.W., Hollands S., Duffy E.L., Strong A., Wynn B.O. (2017).

RAND Projection of Potential Reduction in Drug Spending from Implementation of Drug Formulary

Overall Impacts on Drug Costs

- Prescriptions will Decrease by 7.1% (or 381,000 fills)
- Drug spending will Decrease by 10.4% (or \$45.4 million)

03

Impact of Medical Fraud Enforcement



Background

- SB 1160 & AB 1244 (2016) included provisions related to providers indicted for fraud.
- Fraud prevention thought to be a contributor to post-SB 863 downward medical cost trend.
- At the April 12, 2017 meeting, Group reviewed preliminary analysis of volume of medical treatment from indicted providers.
- Analysis updated based on current DWC list of indicted and suspended providers.

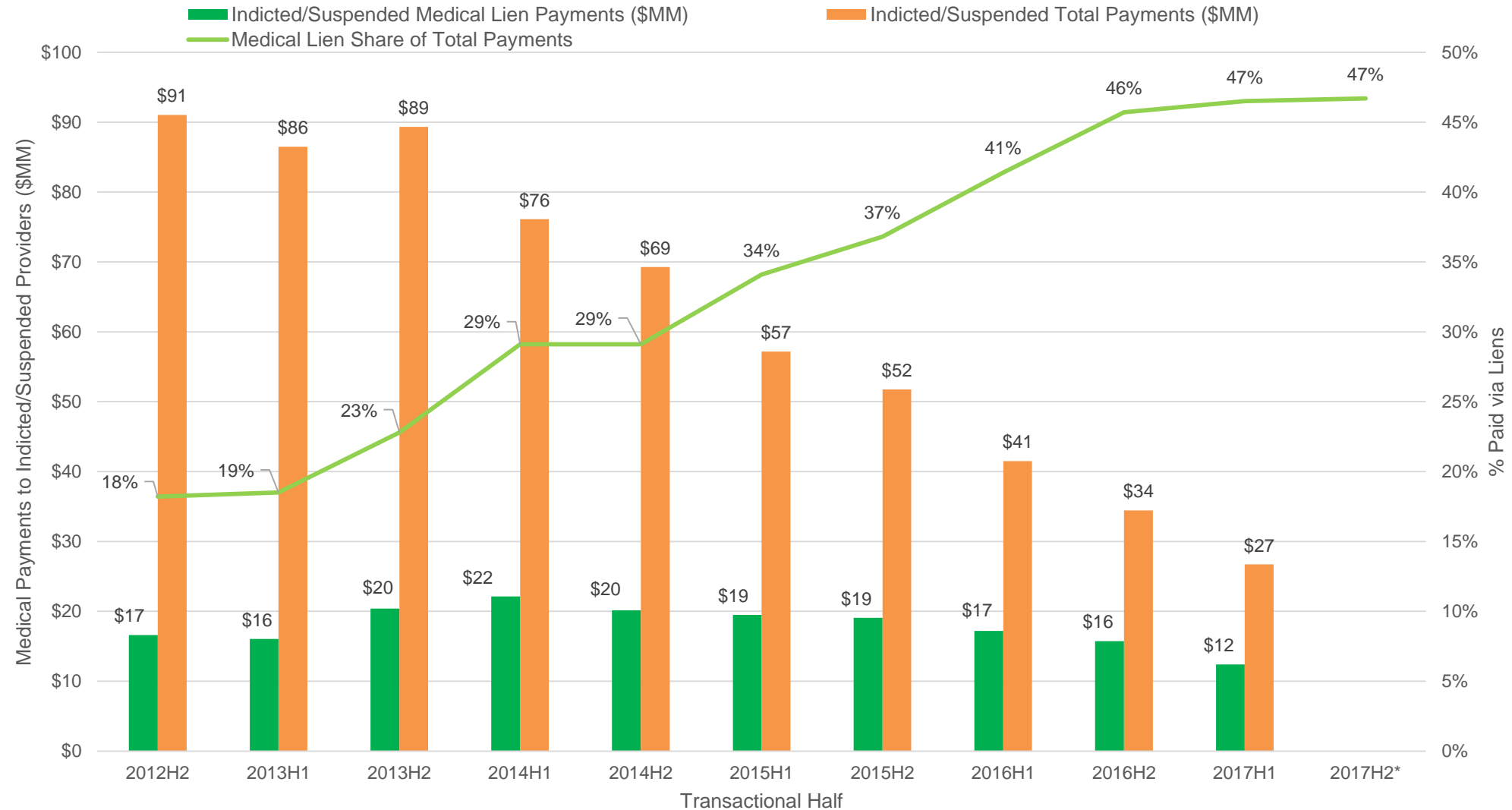
Impact of Medical Fraud Enforcement in California Workers' Compensation

Chart 1: Indicted/Suspended Providers - Share of Total Paid Medical



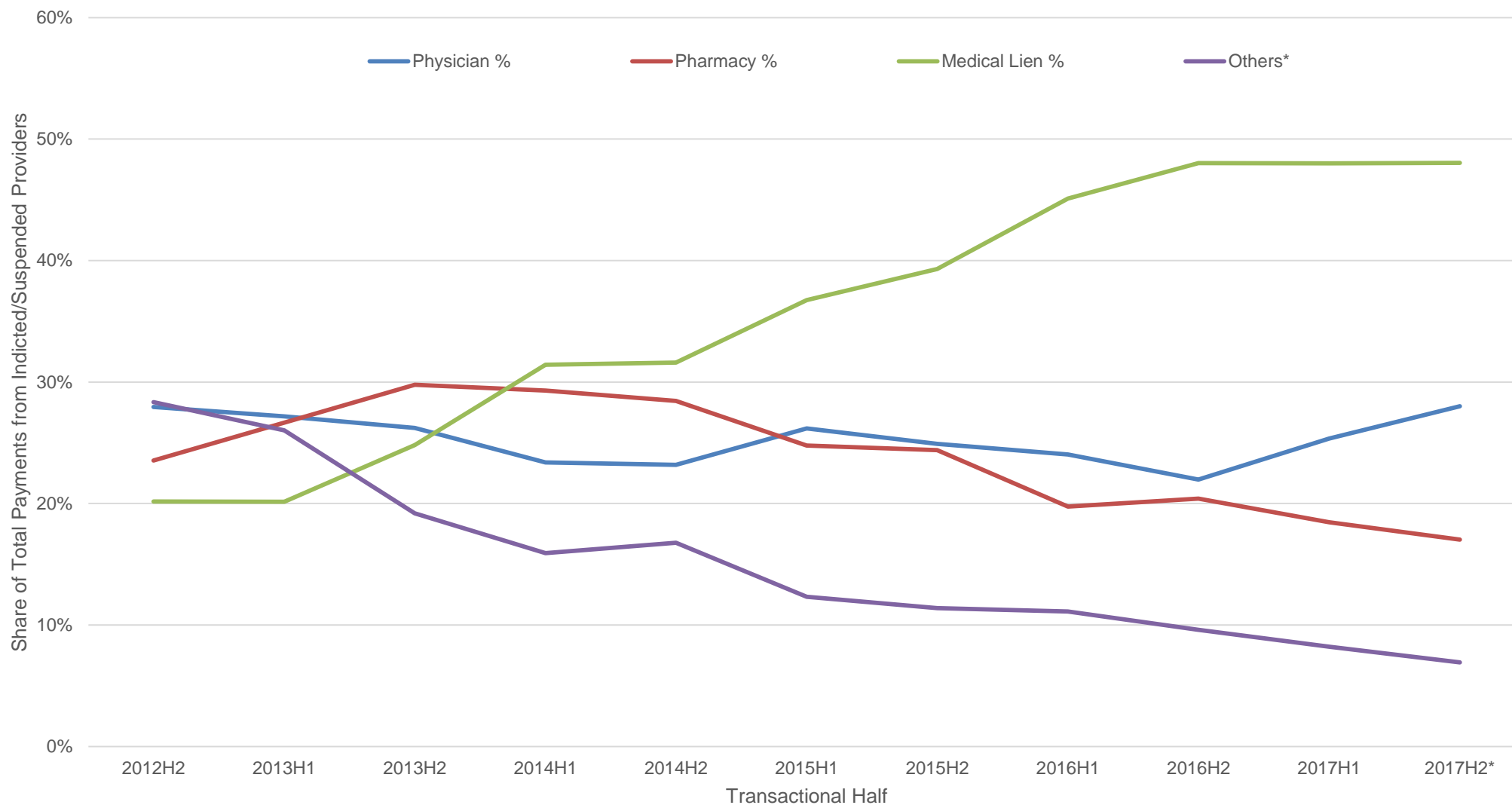
Impact of Medical Fraud Enforcement in California Workers' Compensation

Chart 2: Indicted/Suspended Providers - Total Payments and Lien Payments



Impact of Medical Fraud Enforcement in California Workers' Compensation

Chart 3: Indicted/Suspended Providers: Payment Distribution



* - Others include Medical Legal, HCPCS, Inpatient, Outpatient, Copy Services and Dental

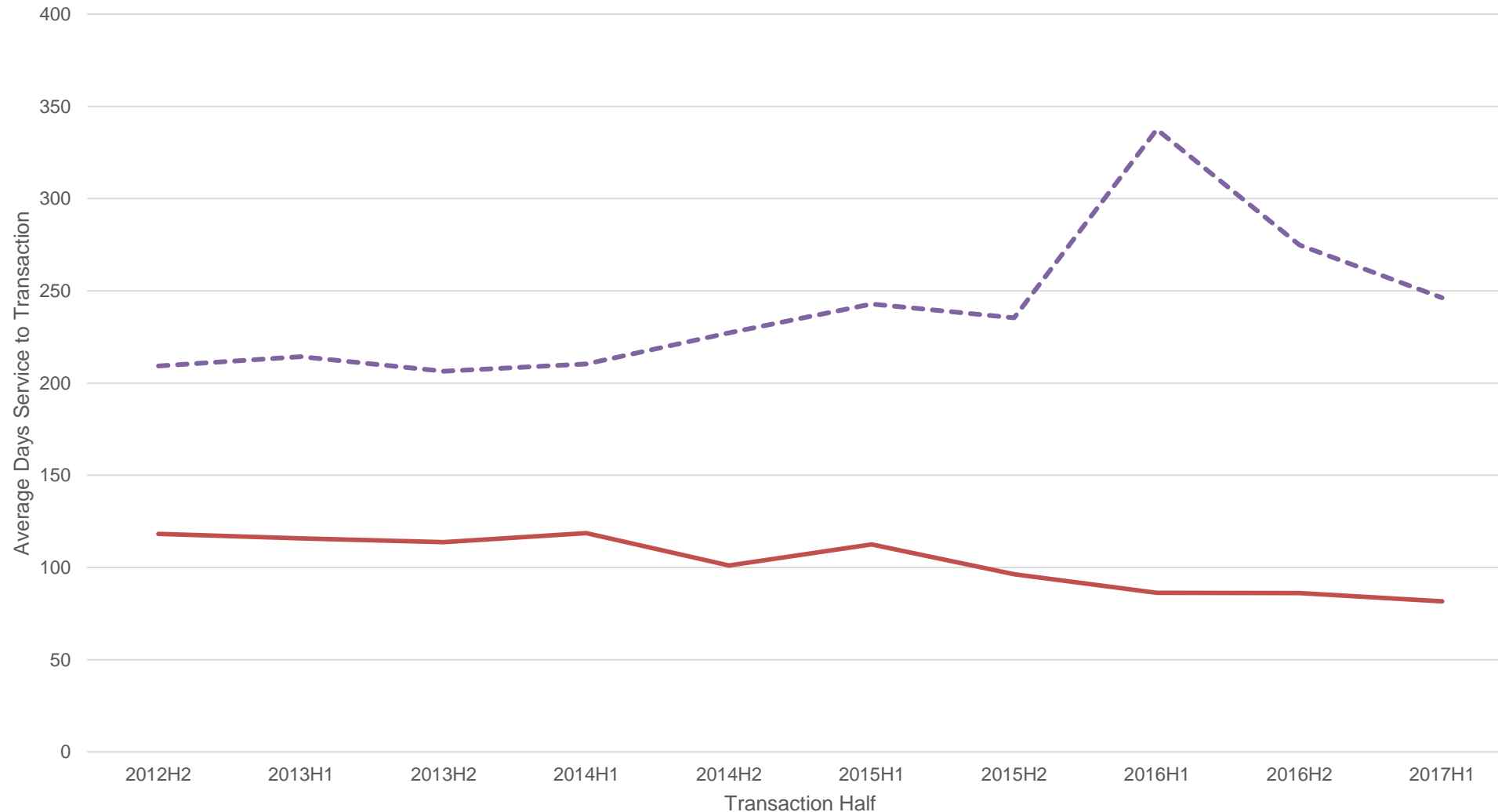
Impact of Medical Fraud Enforcement in California Workers' Compensation

Chart 4: Lien Payment Lags by Days, by Indictment Status



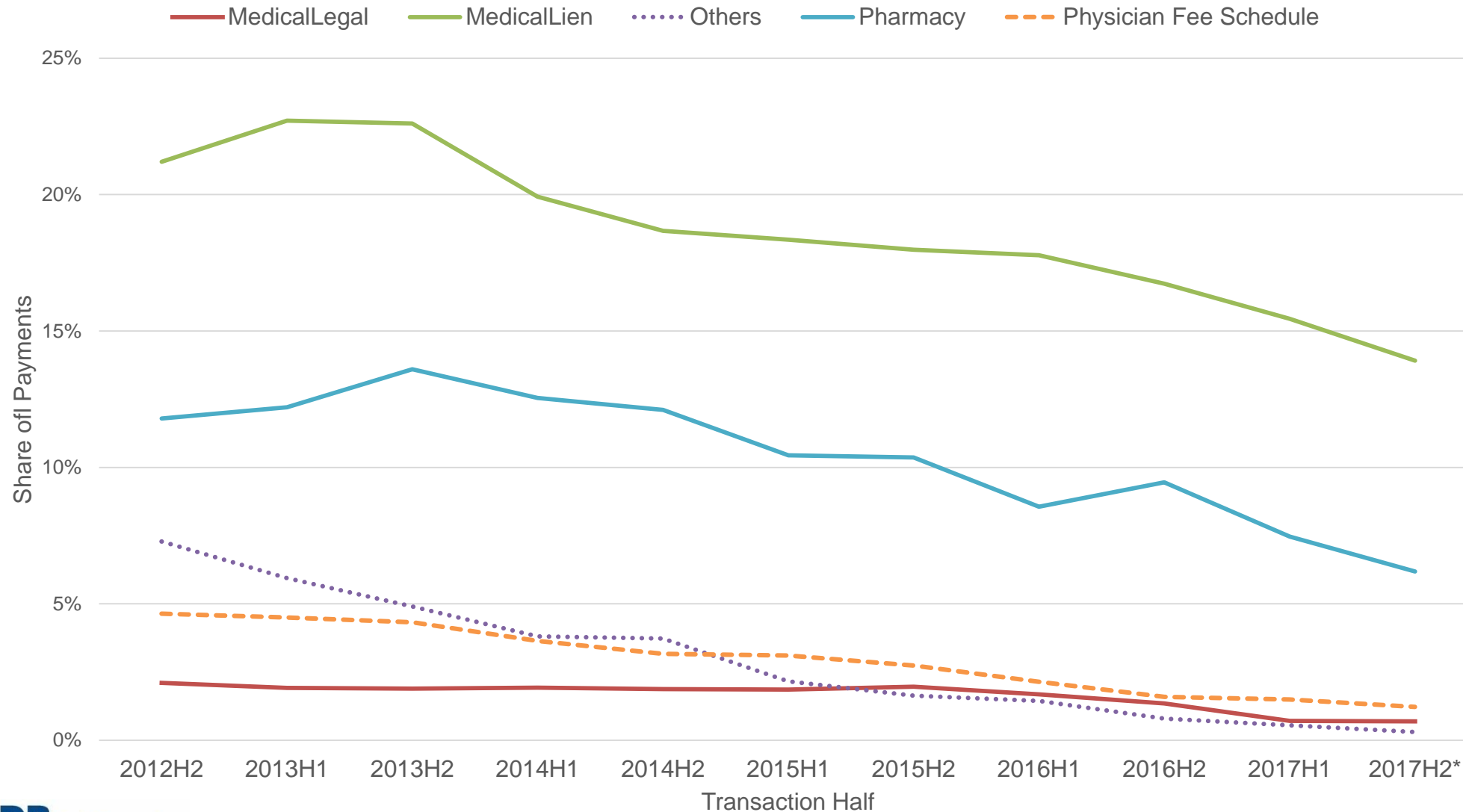
Impact of Medical Fraud Enforcement in California Workers' Compensation

Chart 5: Physician Fee Schedule Payment Lags by Days, by Indictment Status



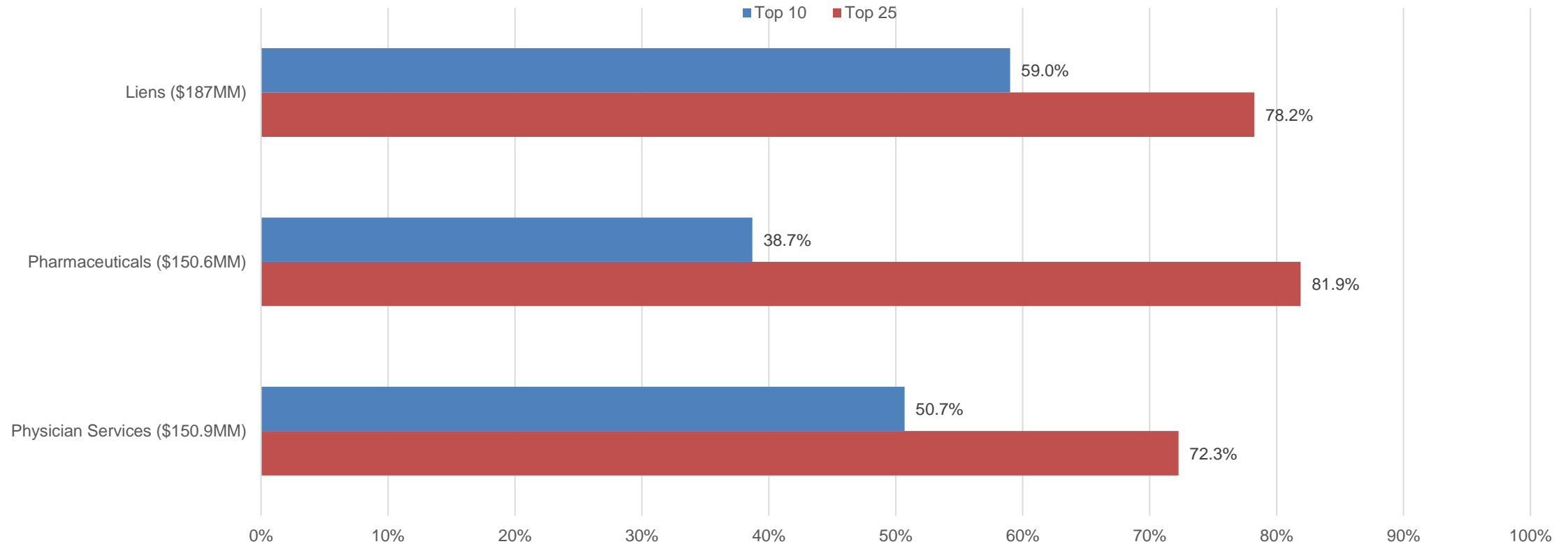
Impact of Medical Fraud Enforcement in California Workers' Compensation

Chart 6: Indicted/Suspended Providers Share of Total Payments



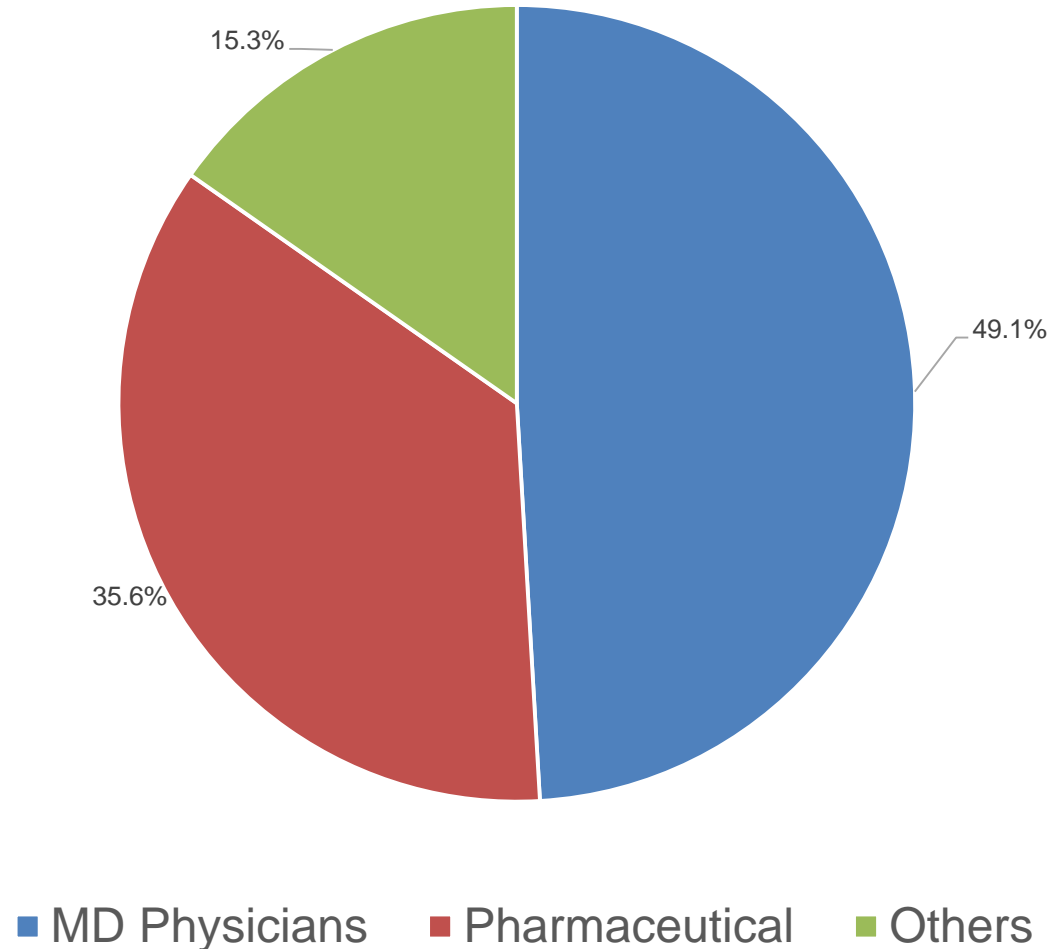
Impact of Medical Fraud Enforcement in California Workers' Compensation

Chart 7: Share of Indicted/Suspended Payments by Provider Rank (Transactions through 2017H2)



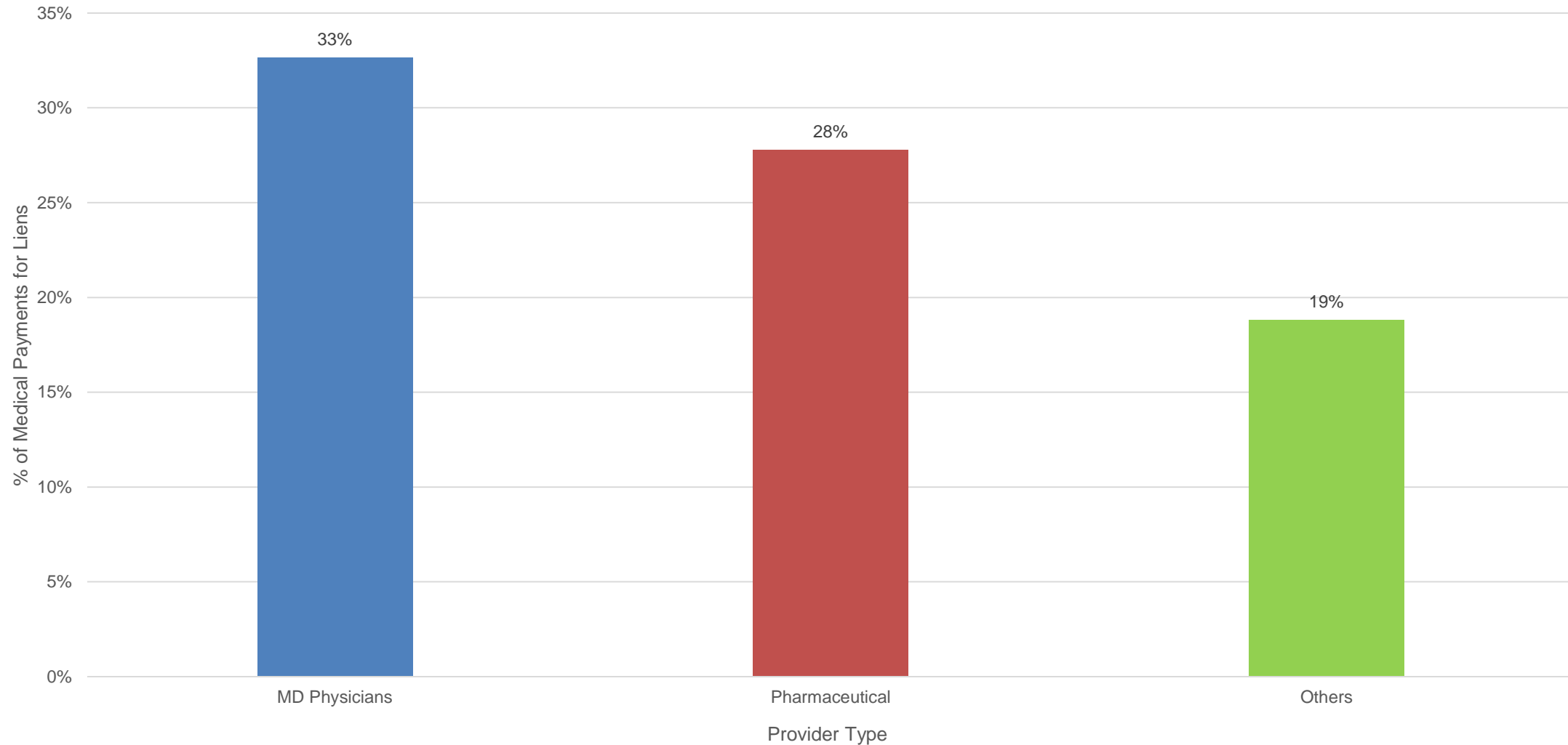
Impact of Medical Fraud Enforcement in California Workers' Compensation

Chart 8: Indicted/Suspended Providers - Provider Count Type Distribution
(Transactions through 2017H2)



Impact of Medical Fraud Enforcement in California Workers' Compensation

Chart 9: Indicted/Suspended Providers - % of Medical Payments for Liens by Provider Type
(Transactions through 2017H2)



■ Sources

- Criminally Charged Providers
 - [http://www.dir.ca.gov/Fraud Prevention/List-of-Criminally-Charged-Providers.pdf](http://www.dir.ca.gov/Fraud%20Prevention/List-of-Criminally-Charged-Providers.pdf)
- Providers Suspended Under Labor Code §139.21 (a)(1)
 - https://www.dir.ca.gov/fraud_prevention/suspension-list.htm

04

12/31/2017 Experience – Review of Methodologies

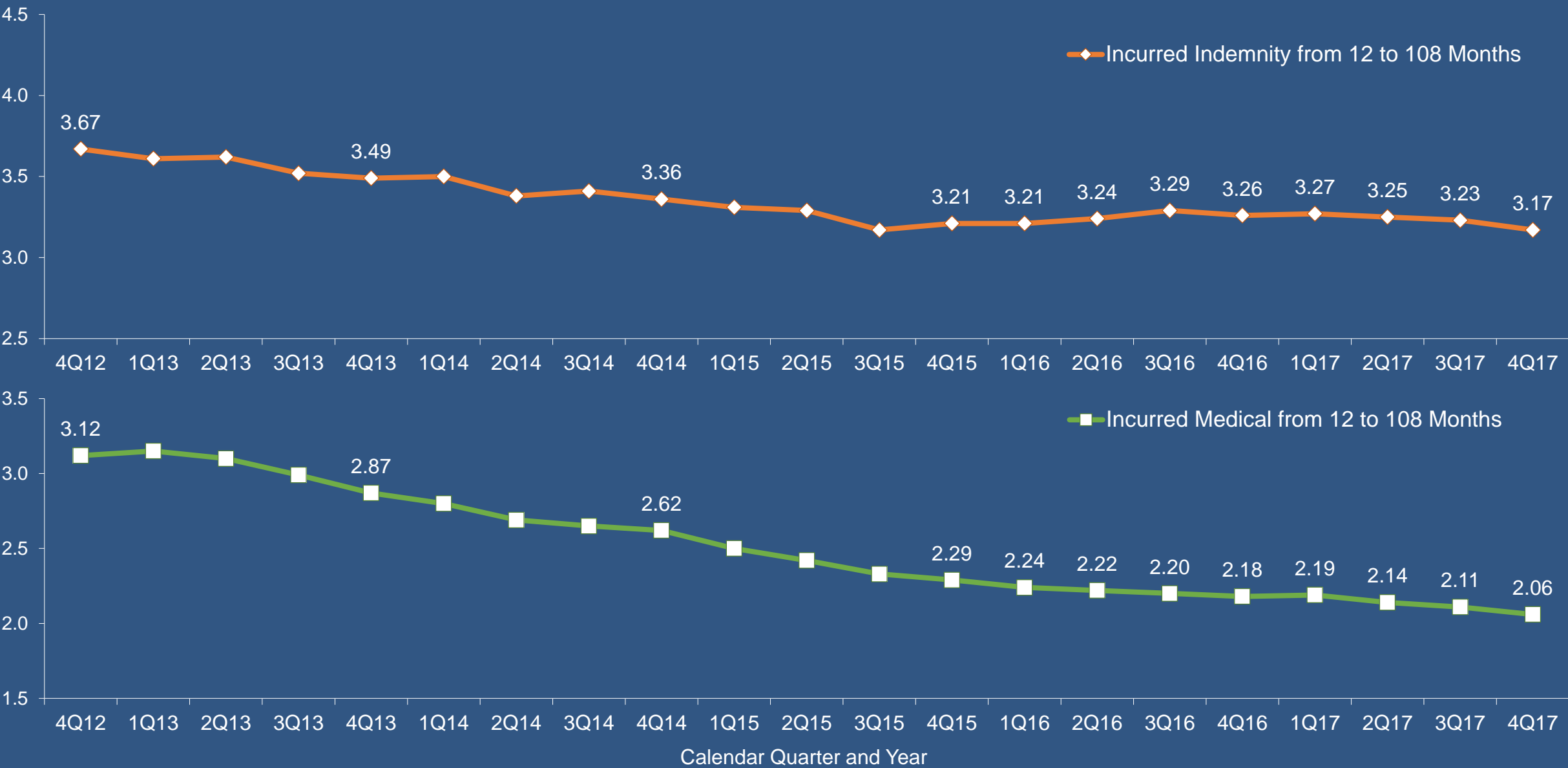
Updated Summary of 12/31/2017 Experience

- Approximately 100% of market reflected
- Changes to methodologies since Amended 1/1/18 Filing
 - Updated indemnity severity trend to 0% given 2017 emergence
 - Reflects adjustment to paid medical development for SB 1160 & AB 1244
 - New wage level forecast to blend UCLA & DoF forecasts
- Other changes since 3/19/2018 meeting
 - Updated insurer data call submissions
 - Medical on-level adjustments for SB 1160 & AB 1244 for older years (not included in development adjustments)
- Projected loss ratio for July 1, 2018 to December 31, 2018 policy period: 0.581
- 6.0 point decrease from Amended 1/1/18 Filing (0.641 based on 6/30/17 data)
- Potential adjustment to long-term power tail fit not included

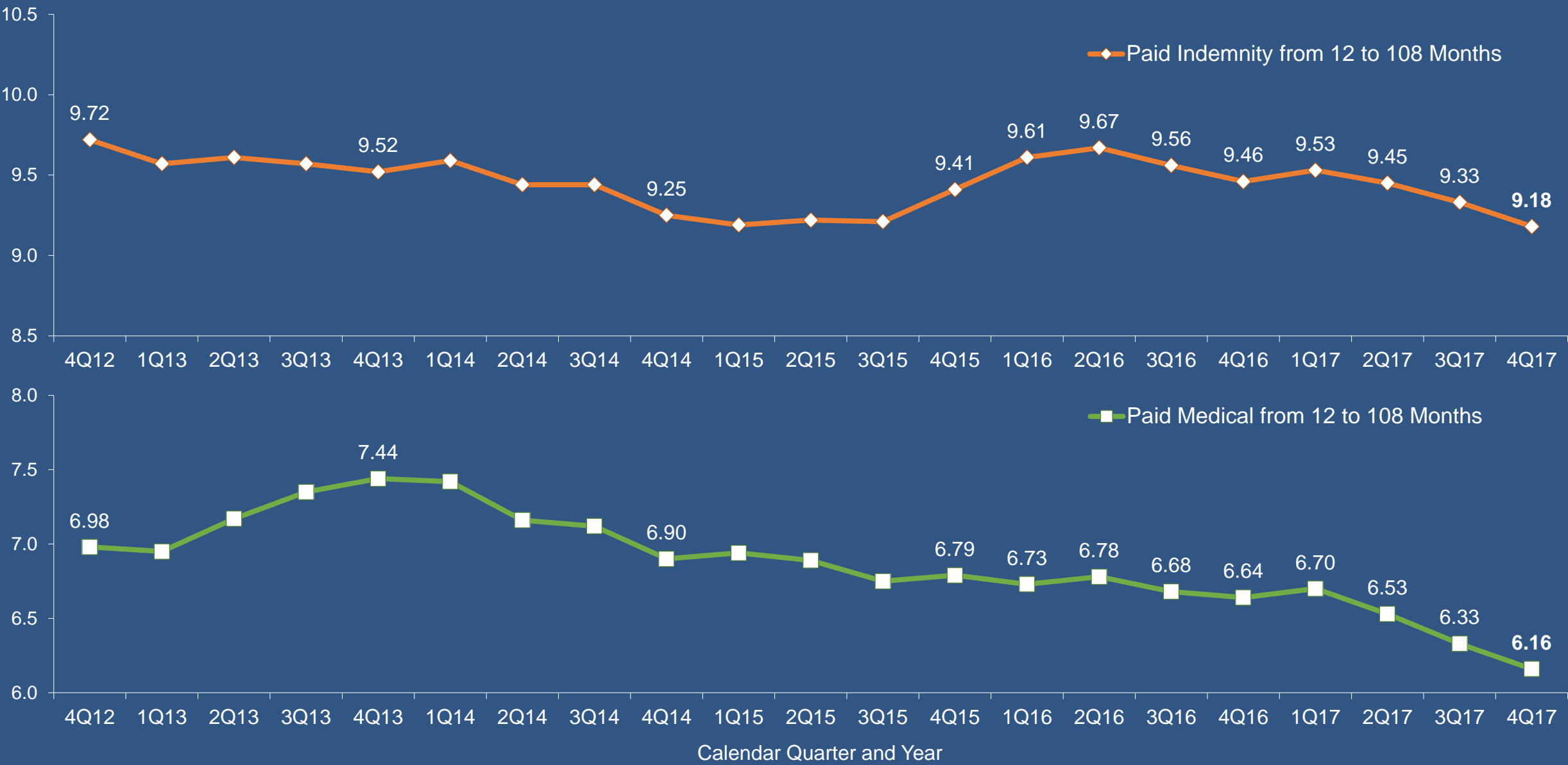
Approximate Change in Loss Ratio Projection

Factor	Change From Amended 1/1/18 Filing
Lower Loss Development	-4.0
Inclusion of 2017 Accident Year	-1.0
Updated UCLA Forecast	+0.5
Updated Frequency Trends	+0.5
Updated Indemnity Severity Trend	-0.5
Trend to July 1, 2018 Policy Period	-0.5
Loss Development Adjusted for SB 1160	-1.0
Blended Wage Forecast Method	0.0
Total	-6.0

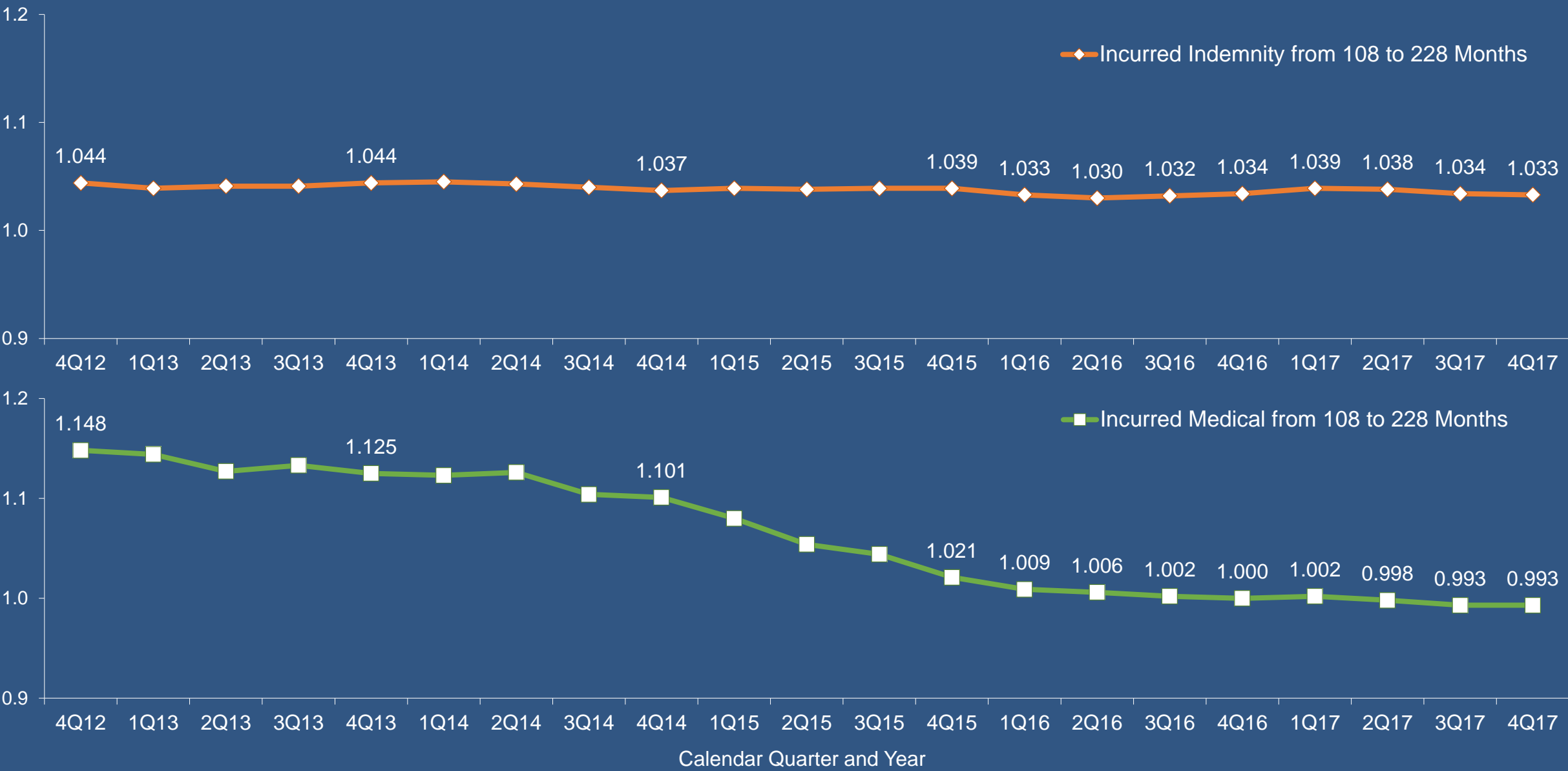
Cumulative Incurred Development from 12 to 108 Months



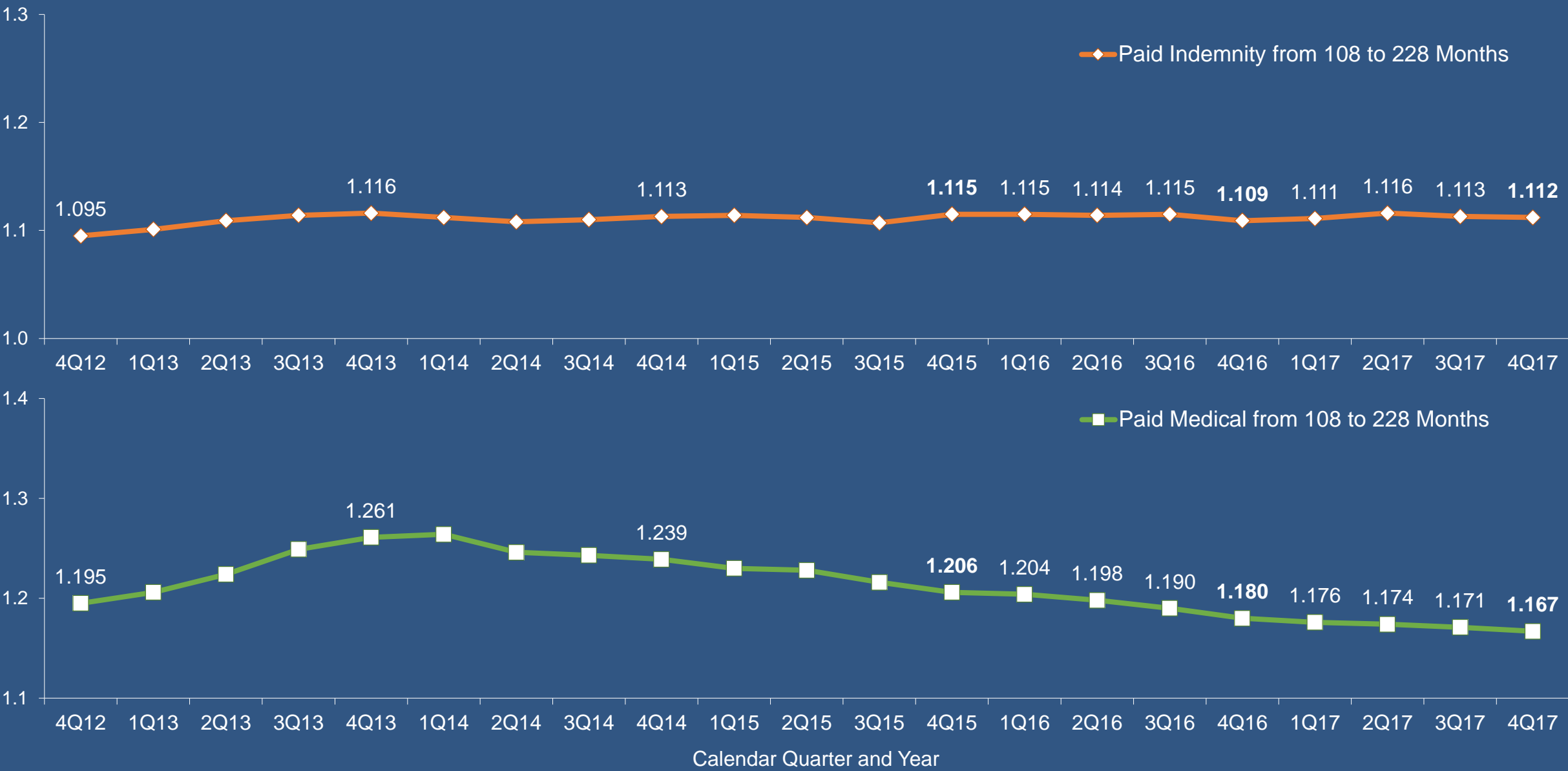
Cumulative Paid Development from 12 to 108 Months



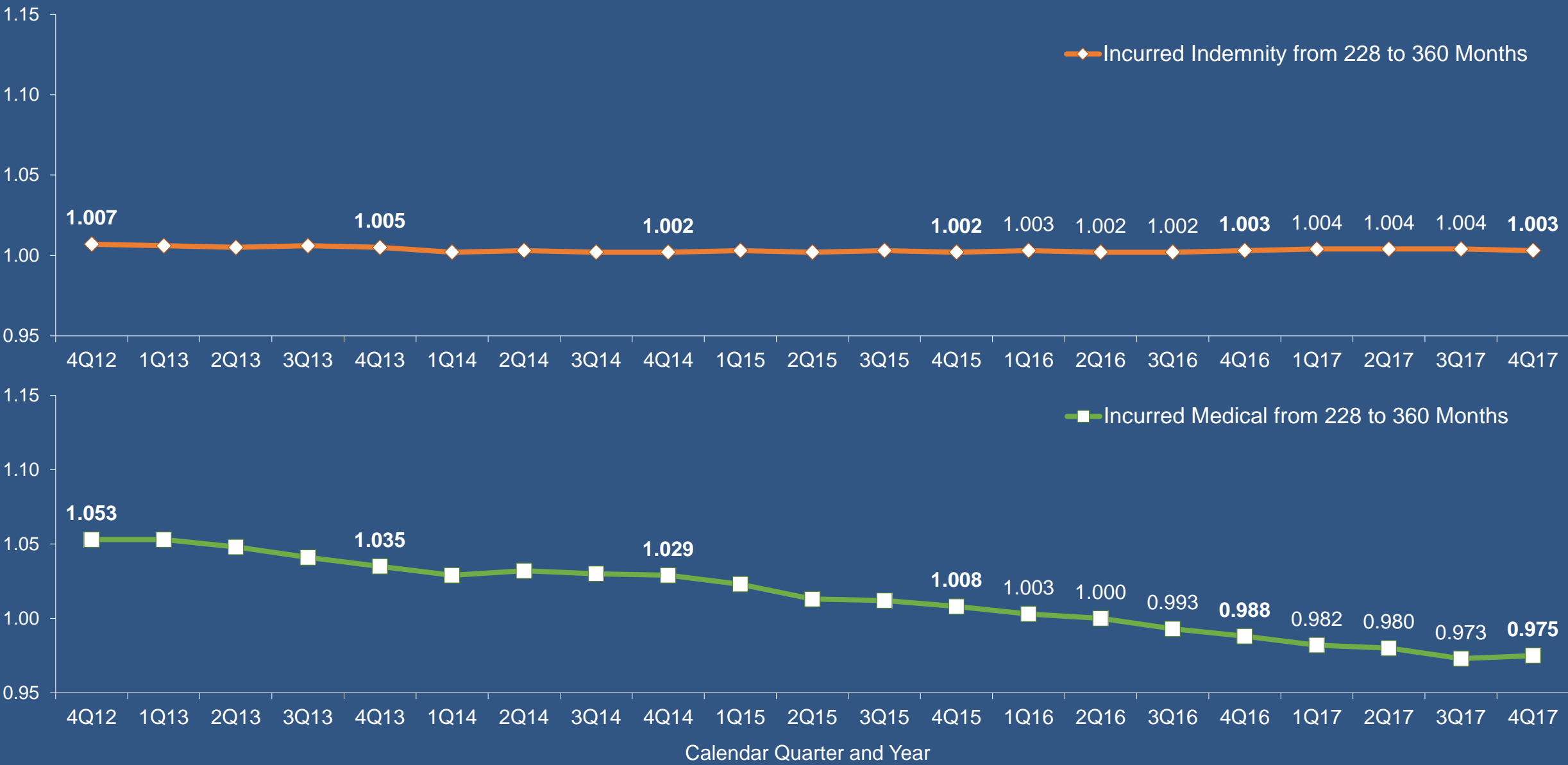
Cumulative Incurred Development from 108 to 228 Months



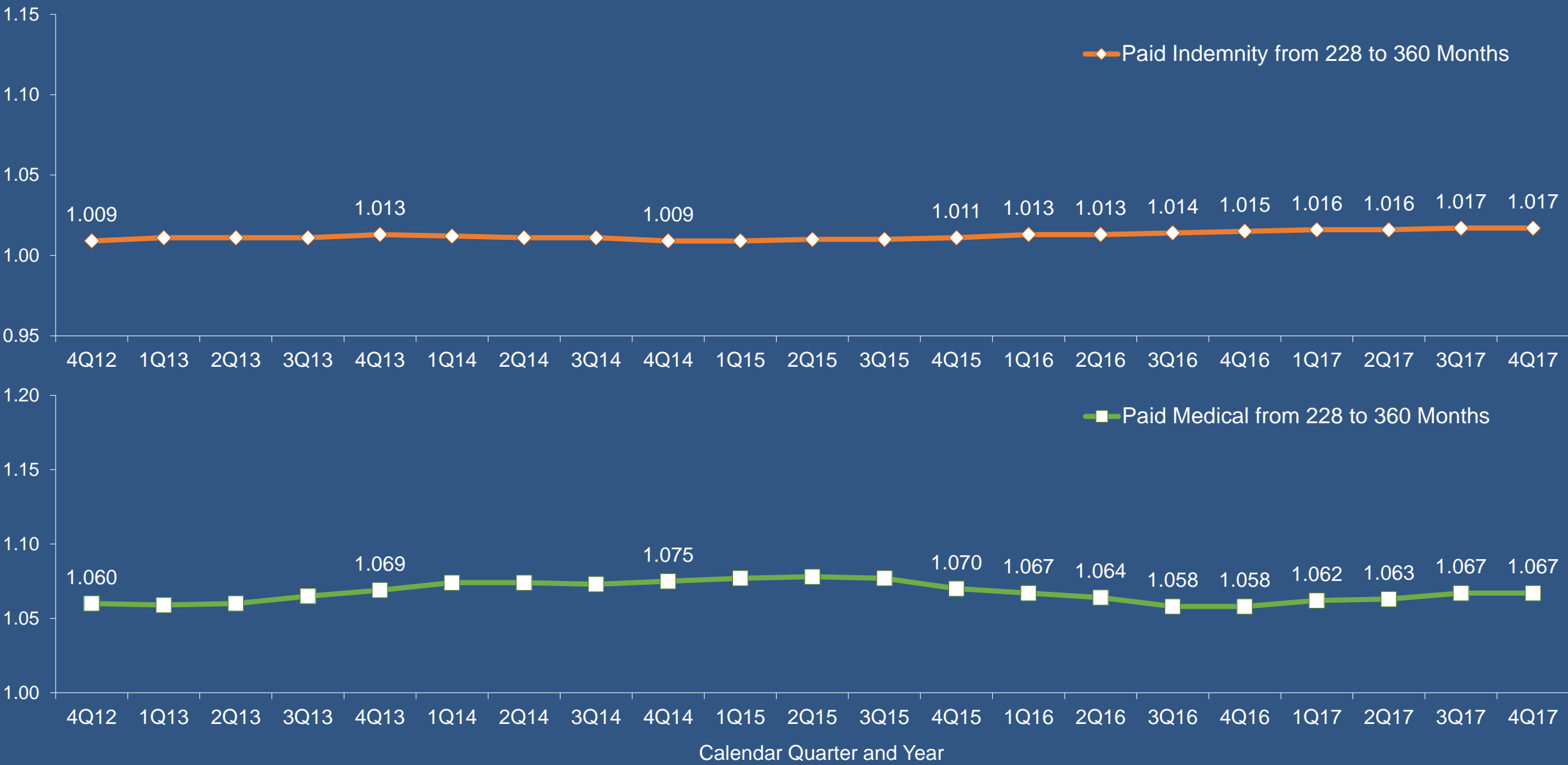
Cumulative Paid Development from 108 to 228 Months



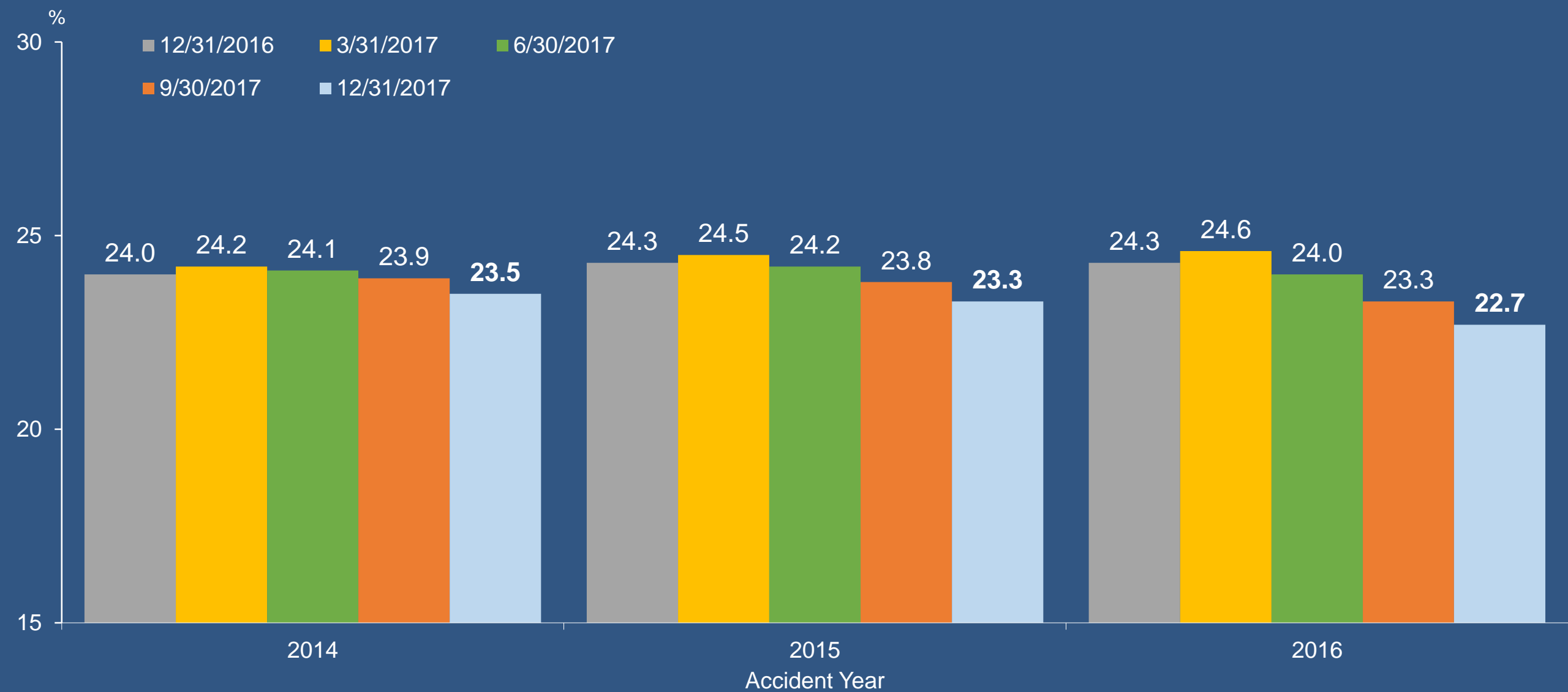
Cumulative Incurred Development from 228 to 360 Months



Cumulative Paid Development from 228 to 360 Months

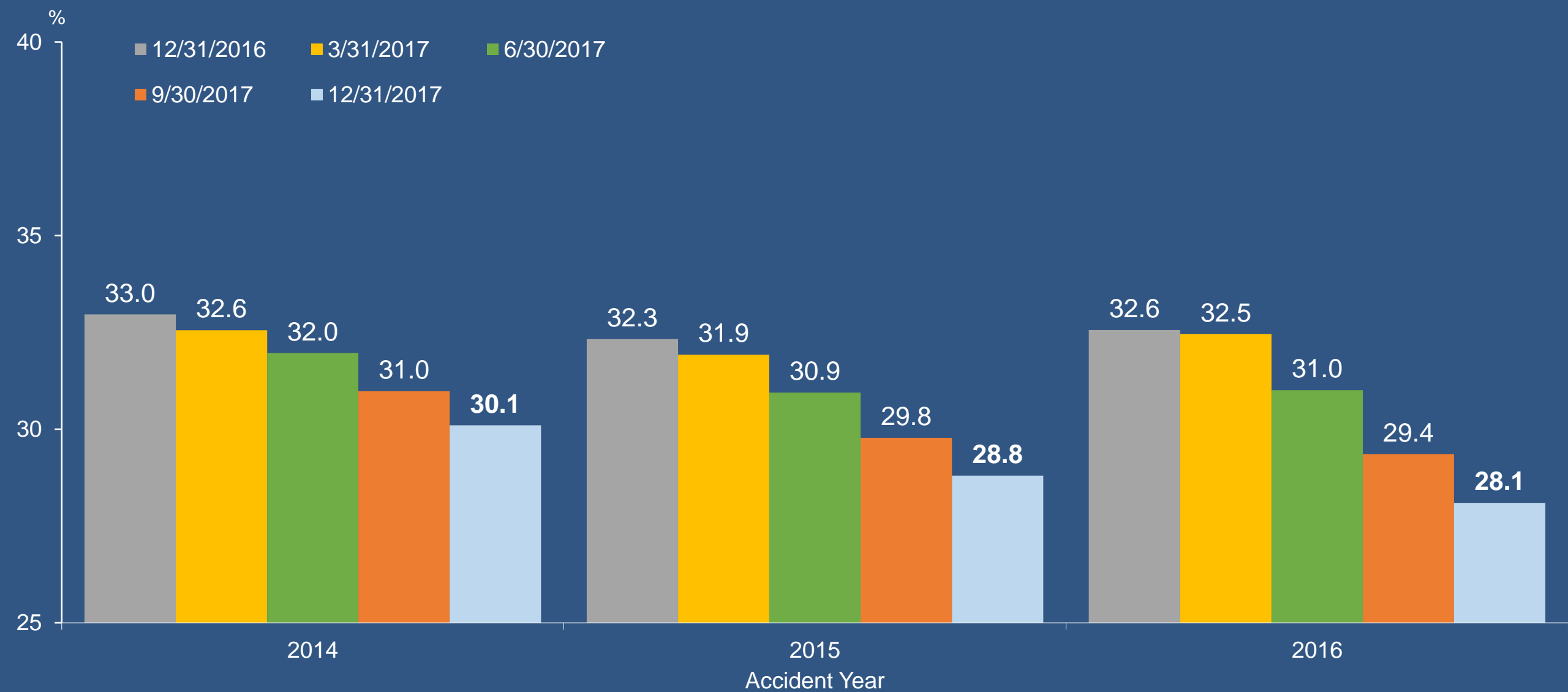


Projected Ultimate Indemnity Loss Ratios (Exhibit 3.1)



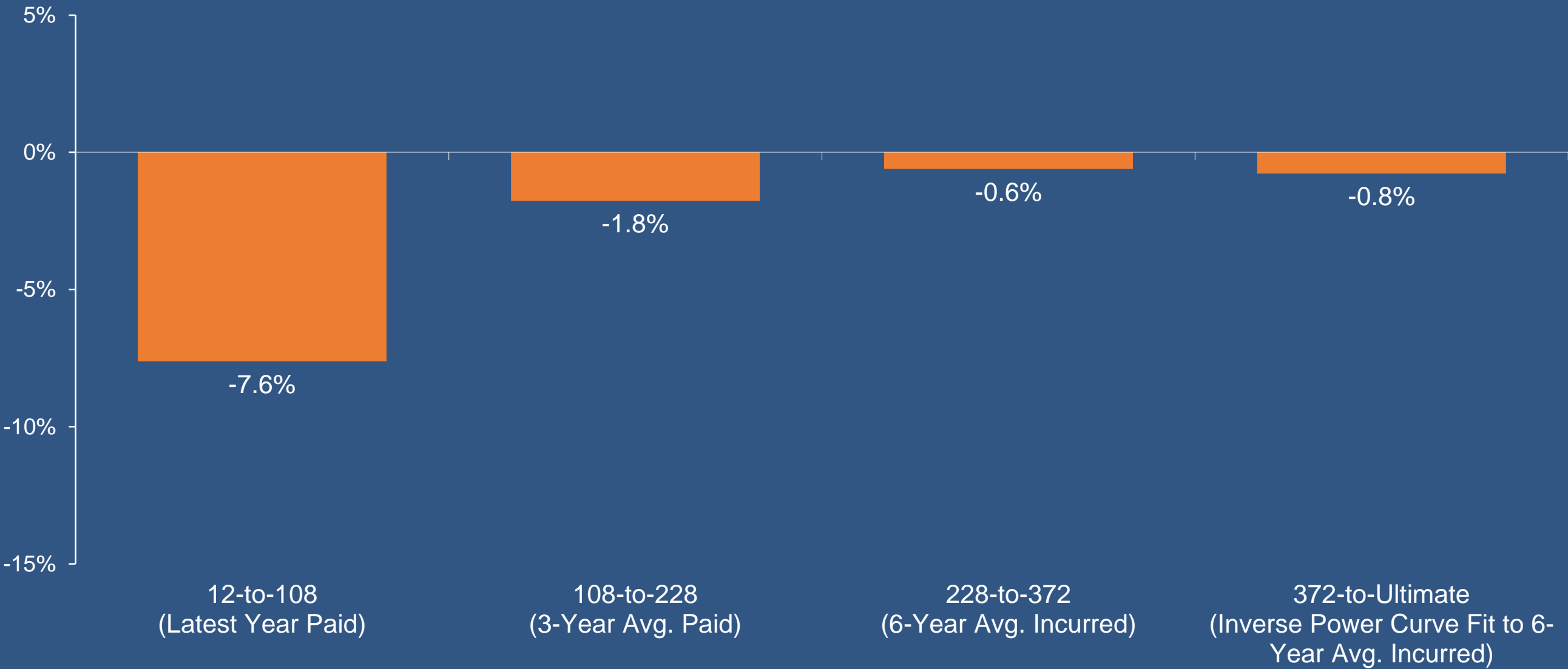
Note: All loss ratios are adjusted to the loss development methodology reflected in the 4/3/2018 Agenda and may not be comparable to the actual loss ratios projected at that time.

Projected Ultimate Medical Loss Ratios (Exhibit 3.2)

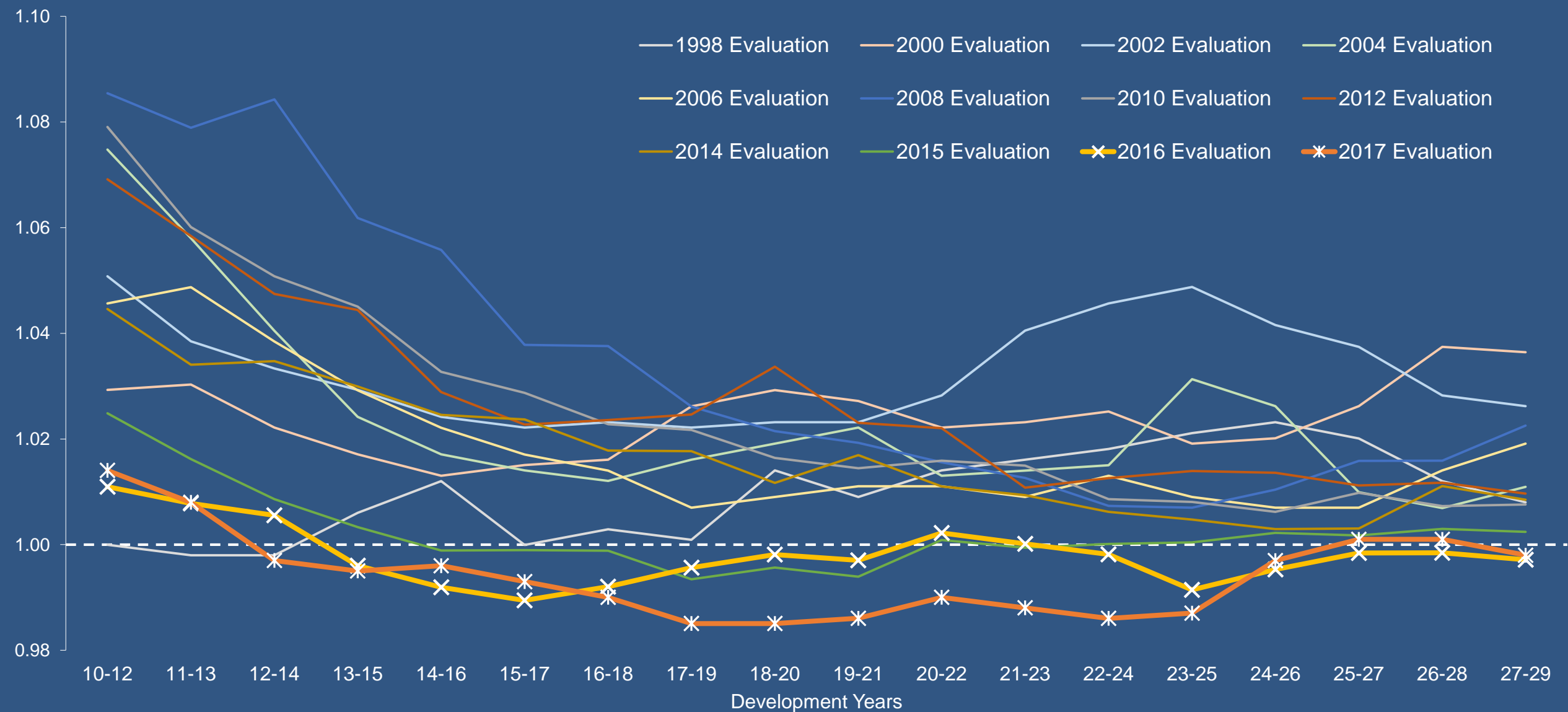


Note: All loss ratios are adjusted to the loss development methodology reflected in the 4/3/2018 Agenda and may not be comparable to the actual loss ratios projected at that time.

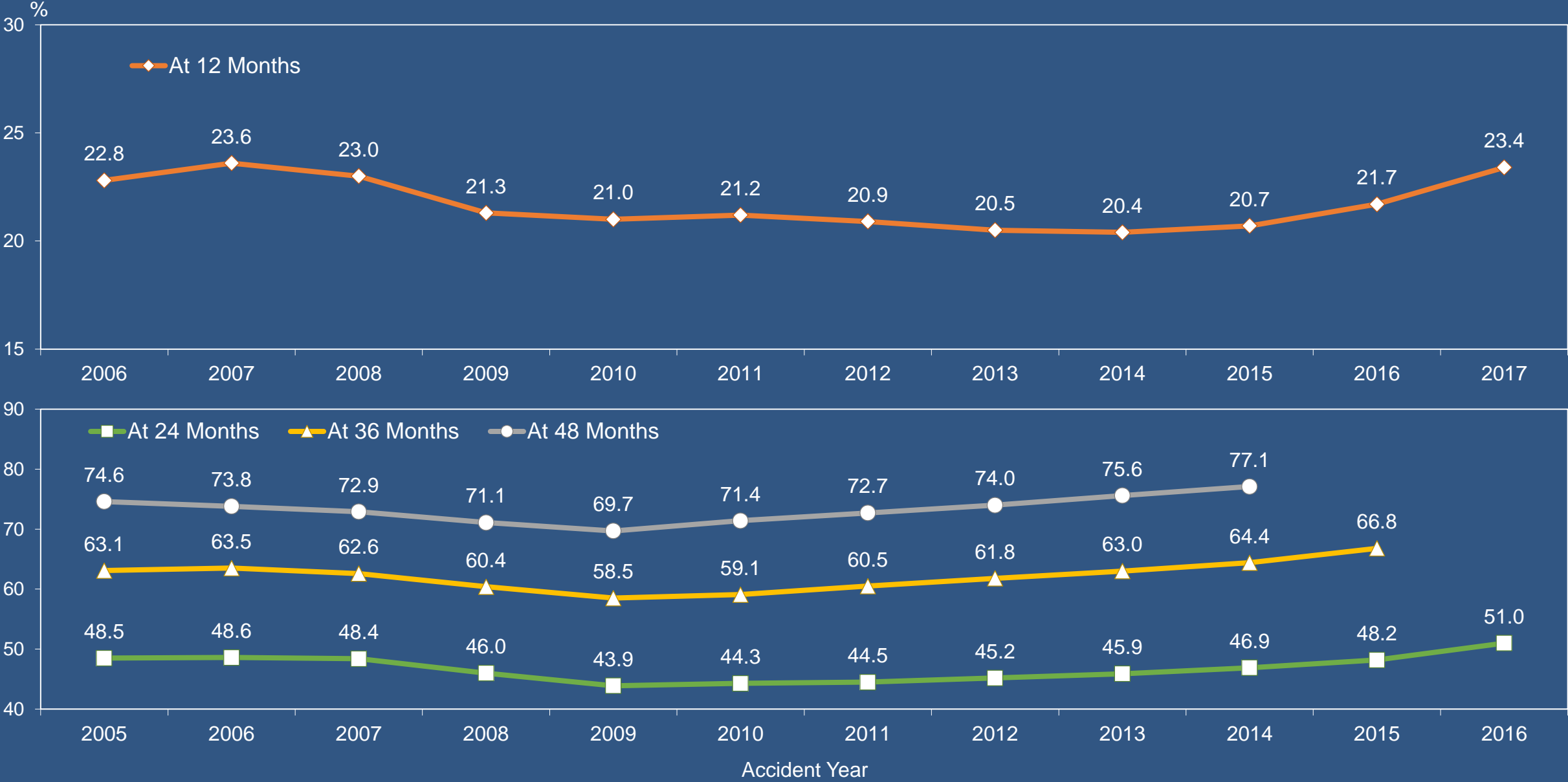
Change in Projected Medical Development Factor 6/30/17 to 12/31/17 Experience



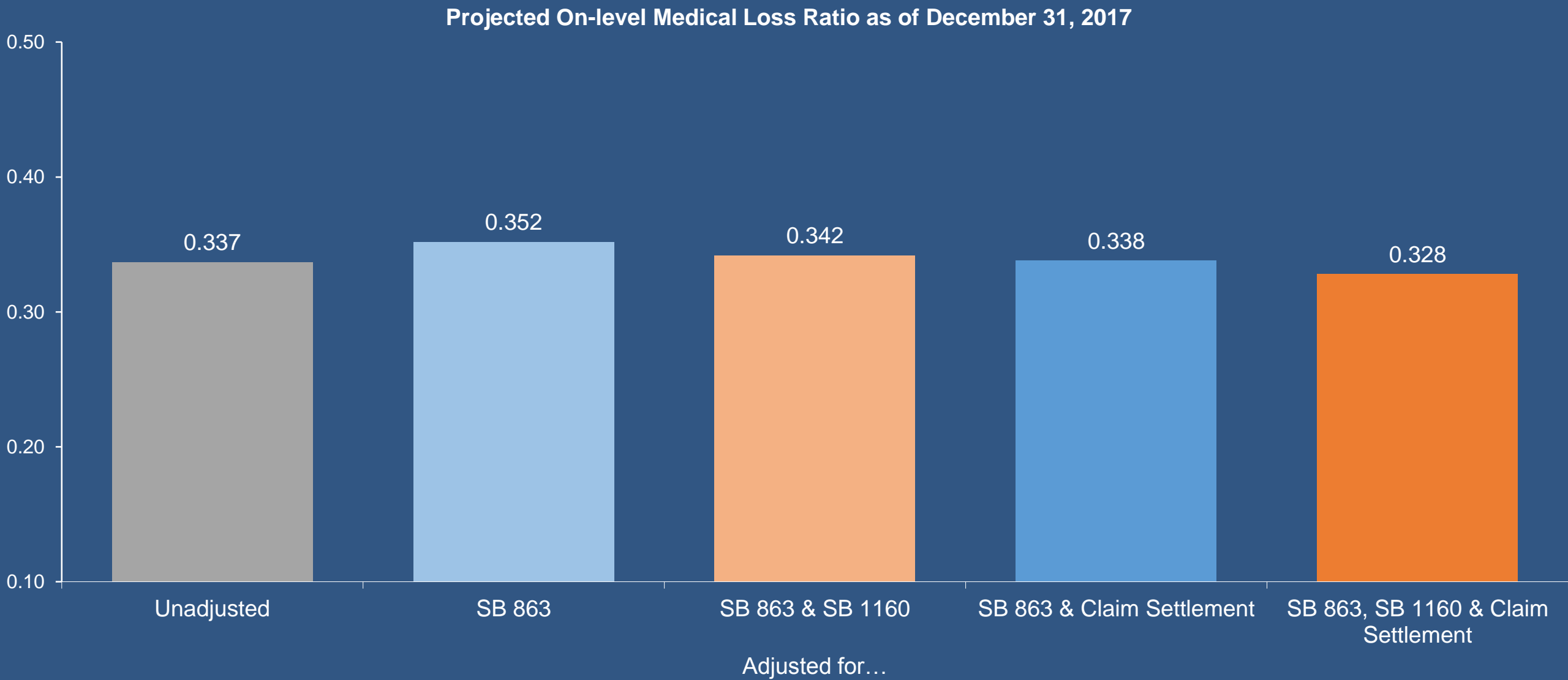
Incurred Medical Age-to-Age Factors at December 31 Evaluations



Ultimate Indemnity Claim Settlement Ratios (Exhibit 11.2)



Impact of Adjustments to Paid Medical Loss Development



Alternative Loss Development Methodologies (Item AC18-04-02)

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 incurred development has significantly decreased
- 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
 - Unclear how to impute reform impacts
 - Current projection slightly above unadjusted incurred projection
 - Method to be reviewed in depth later this year

Alternative Loss Development Methodologies (Item AC18-04-02)

Paid Methods

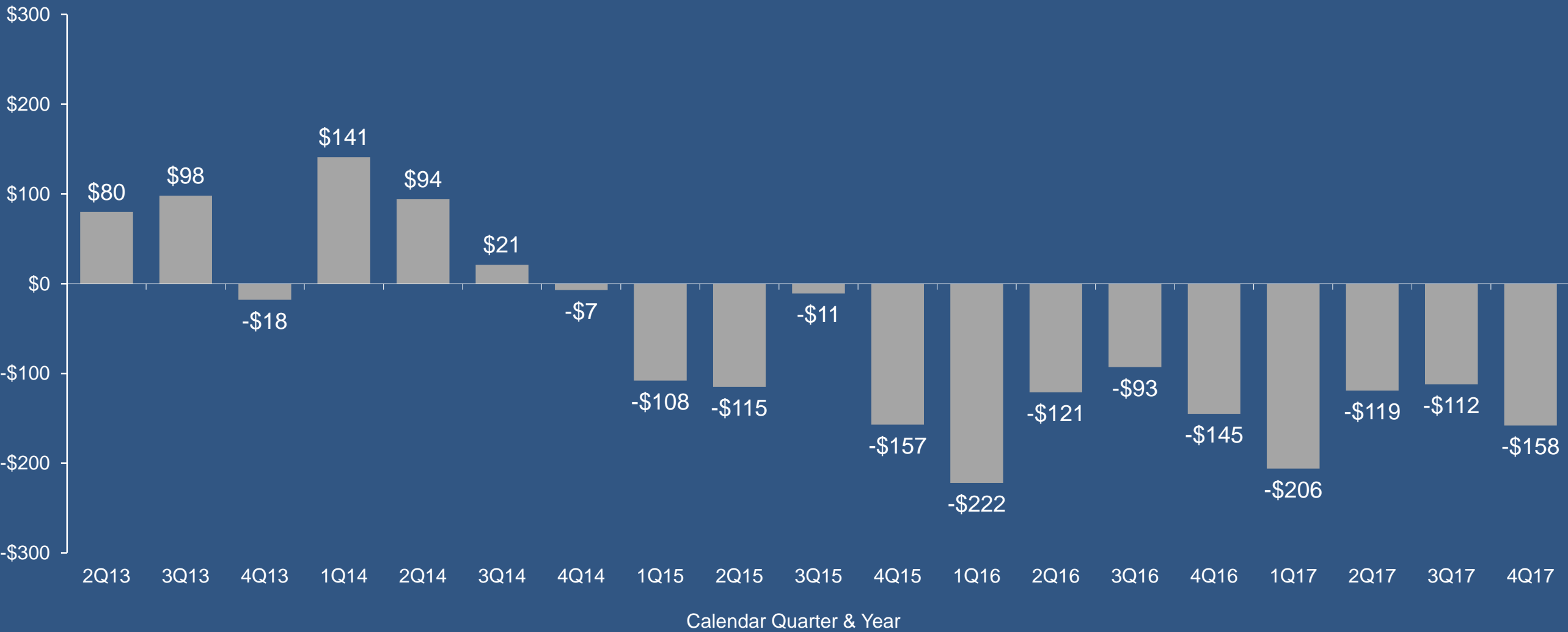
- Unadjusted Paid Projections
 - Best with stable payment patterns
 - Can be distorted by changing settlement rates or reforms
 - Generally outperformed unadjusted incurred during transition periods
 - Less variability in paid patterns across insurers than in incurred patterns
 - Recent changes in paid development likely related to reforms and claim settlement changes
- Reform-Adjusted Paid
 - Best with clear evidence of reform impact on payment patterns
 - SB 863 adjustments have been performing well and are reviewed and updated regularly
 - SB 1160 adjustments reflect impact of liens on medical development patterns
 - Current projection above unadjusted paid projection

Alternative Loss Development Methodologies (Item AC18-04-02)

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 recent review
 - Claim settlement rates have increased significantly over past couple years

Change in Total Medical Case Reserves by Quarter



Medical Age-to-Age Factors Indexed to 1990 – 12 to 24 Months



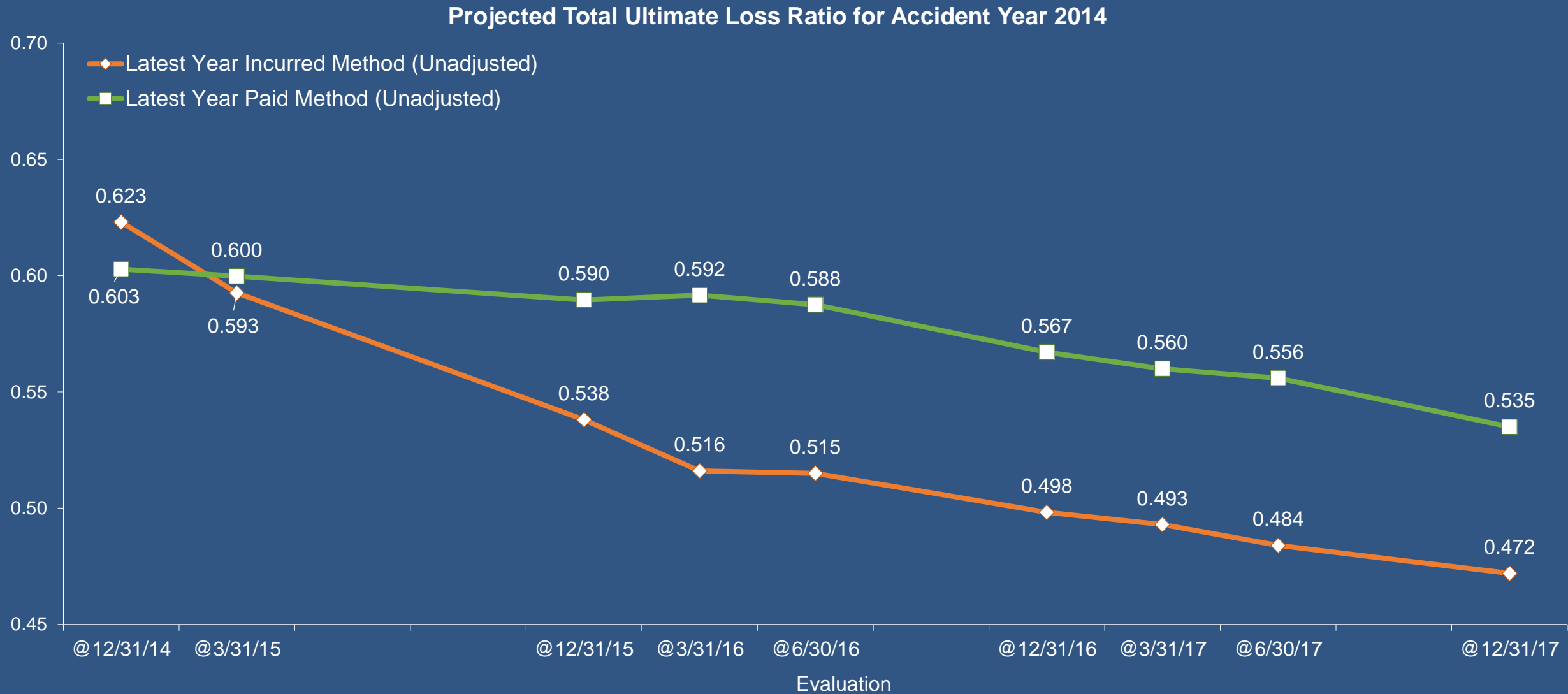
Medical Age-to-Age Factors Indexed to 1990 – 48 to 60 Months



Medical Age-to-Age Factors Indexed to 1990 – 108 to 120 Months



Paid vs. Incurred Methodology Comparison

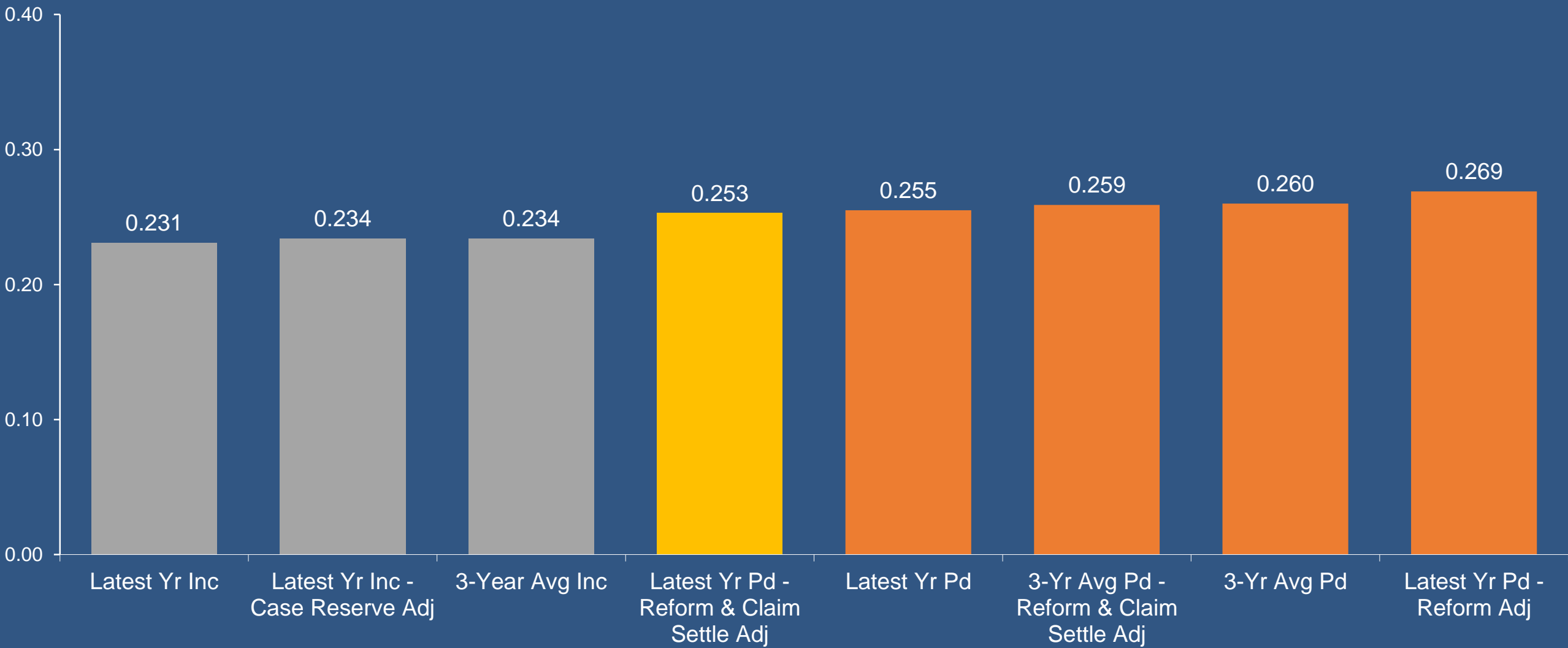


Note: All loss ratios are adjusted to the loss development tail methodology reflected in the 4/3/2018 Agenda for consistency.

Projected Indemnity On-level Loss Ratios under Alternative Development Methods

Method	Projection
Paid Latest Year Adjusted for Reforms & Claim Settlement Rate (Agenda)	0.253
Incurred 3-Year Average Unadjusted	0.234
Incurred Latest Year Unadjusted	0.231
Incurred Latest Year Adjusted for Case Reserve Changes	0.234
Paid 3-Year Average Unadjusted	0.260
Paid Latest Year Unadjusted	0.255
Paid Latest Year Adjusted for Reforms	0.269
Paid 3-Year Average Adjusted for Reforms & Claim Settlement Rate	0.259
<i>Agenda Method w/ Tail Fit Excluding Latest 2 Calendar Years</i>	<i>0.254</i>

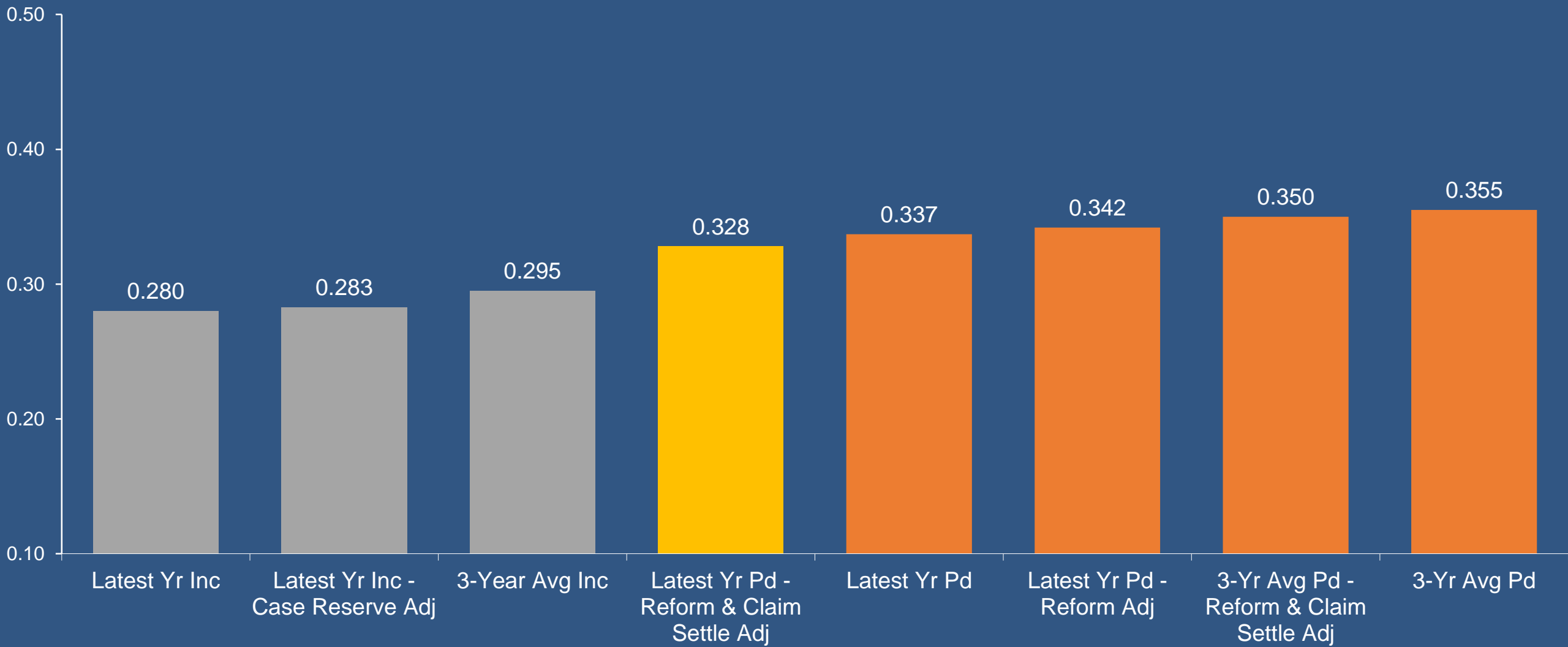
Projected Indemnity On-level Loss Ratios under Alternative Development Methods



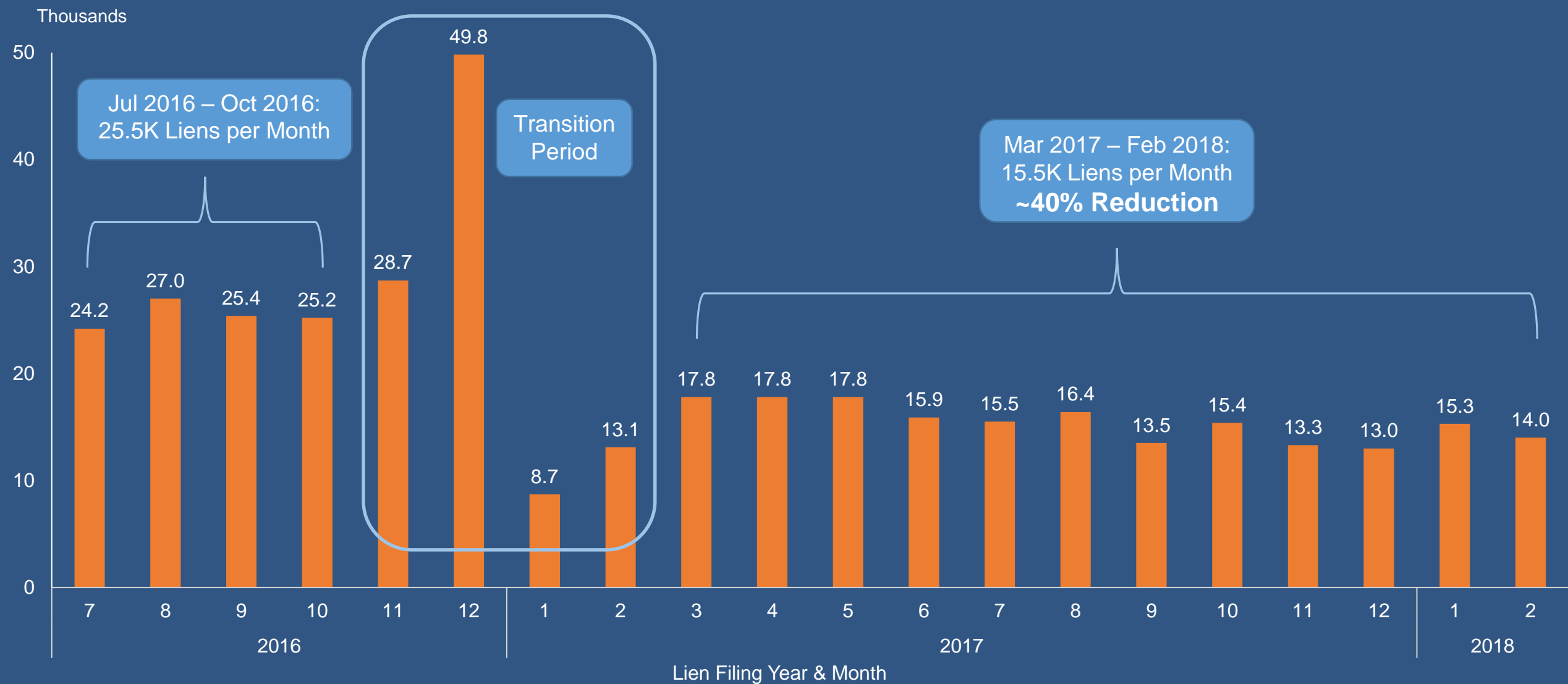
Projected Medical On-level Loss Ratios under Alternative Development Methods

Method	Projection
Paid Latest Year Adjusted for Reforms & Claim Settlement Rate (Agenda)	0.328
Incurred 3-Year Average Unadjusted	0.295
Incurred Latest Year Unadjusted	0.280
Incurred Latest Year Adjusted for Case Reserve Changes	0.283
Paid 3-Year Average Unadjusted	0.355
Paid Latest Year Unadjusted	0.337
Paid Latest Year Adjusted for Reforms	0.342
Paid 3-Year Average Adjusted for Reforms & Claim Settlement Rate	0.350
<i>Agenda Method w/ Tail Fit Excluding Latest 2 Calendar Years</i>	<i>0.330</i>

Projected Medical On-level Loss Ratios under Alternative Development Methods



Recent Lien Filings



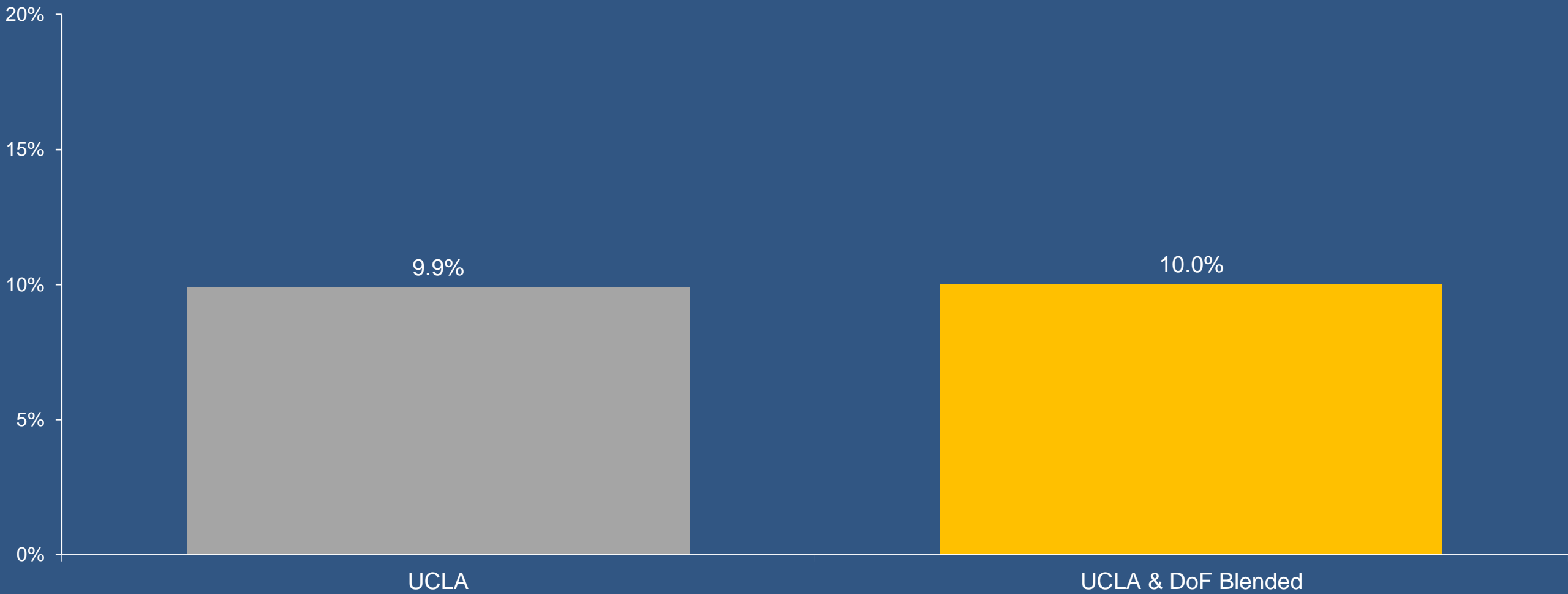
Source: DWC EAMS data.

On-leveling for SB 1160 / AB 1244 (Exhibit 4.2)

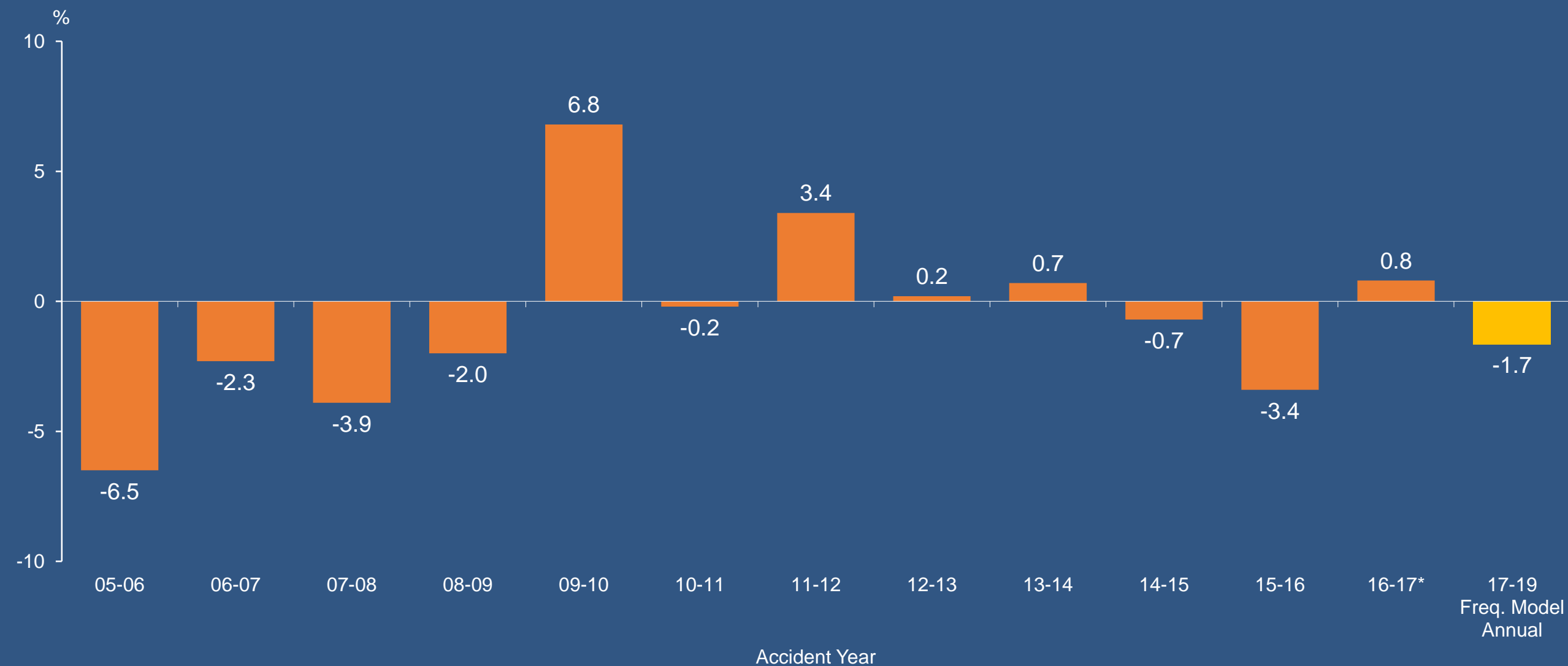
- Substantial impact on more recent years reflected in adjustments to loss development
- On-leveling needed for medical paid prior to January 1, 2017 which is not included in the development adjustment
- Older years require full impact in on-level since they are not affected by the development adjustment
- Factors based on estimated paid @12/31/16 weighted with full estimated impact on medical (-2.4% based on a 40% lien reduction)

Accident Year	Estimated % Medical Paid @12/31/16	Cumulative On-level for SB 1160	Incremental On-level for SB 1160
2011 (& Prior)	N/A	-2.4%	-1.0%
2012	58%	-1.4%	-0.2%
2013	51%	-1.2%	-0.2%
2014	41%	-1.0%	-0.3%
2015	28%	-0.7%	-0.4%
2016	11%	-0.3%	-0.3%
2017	0%	0.0%	0.0%

Cumulative Wage Level Change Forecast – 2016 to April 1, 2019

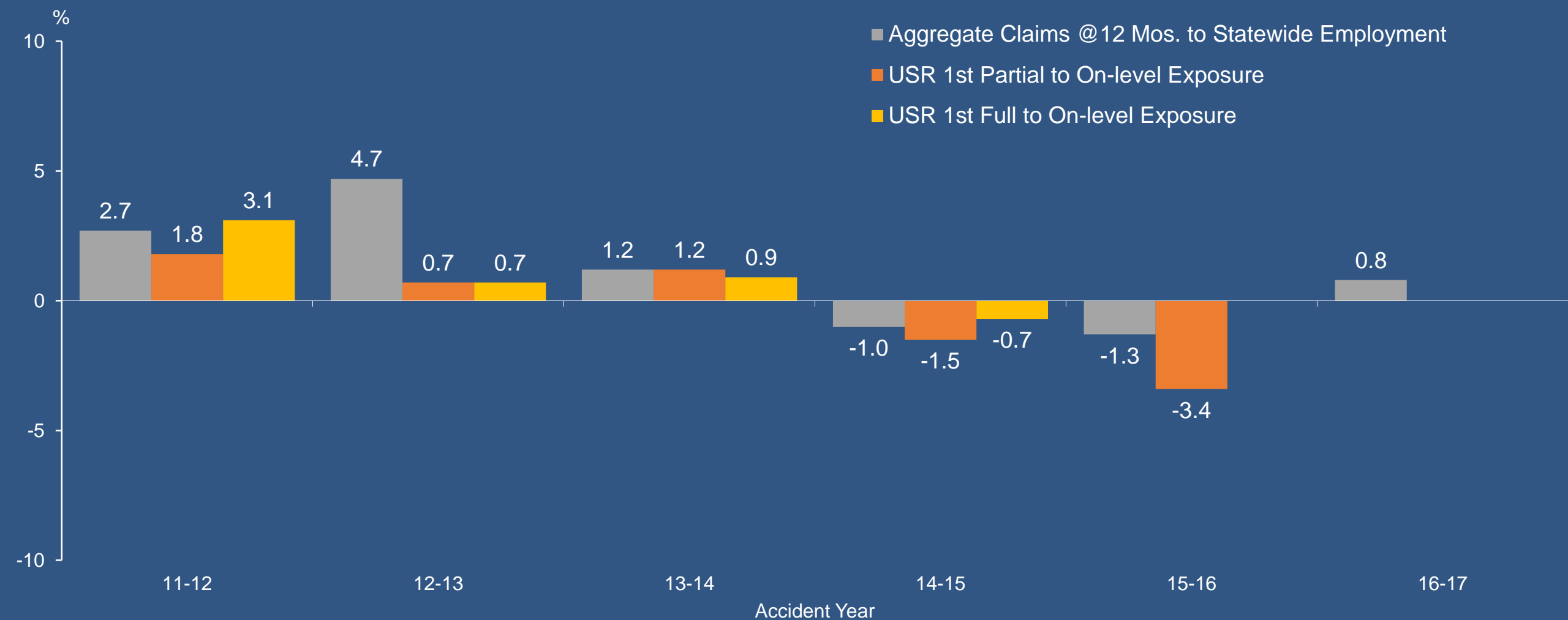


Projected Changes in Indemnity Claim Frequency (Exhibits 6.1 & 12)

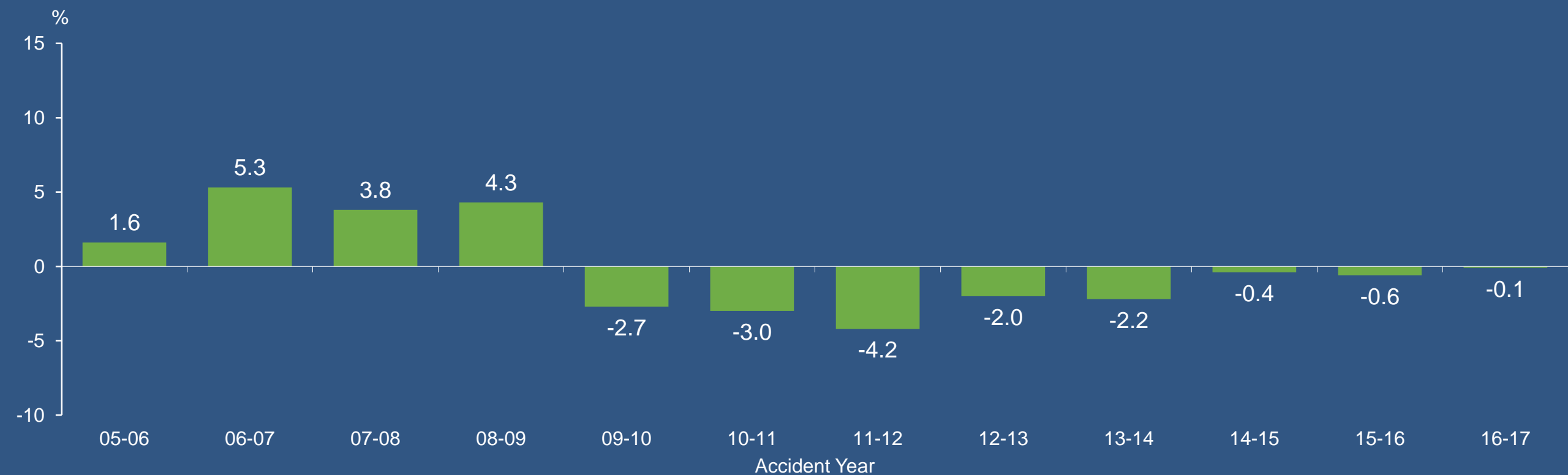


* Based on changes in reported aggregate indemnity claim counts as of 12/31/2017 compared to changes in statewide employment. All other estimates based on unit statistical indemnity claims compared to reported insured payroll.

Development of Indemnity Claim Frequency Change Estimates



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



Annual Exponential Trend Based on:

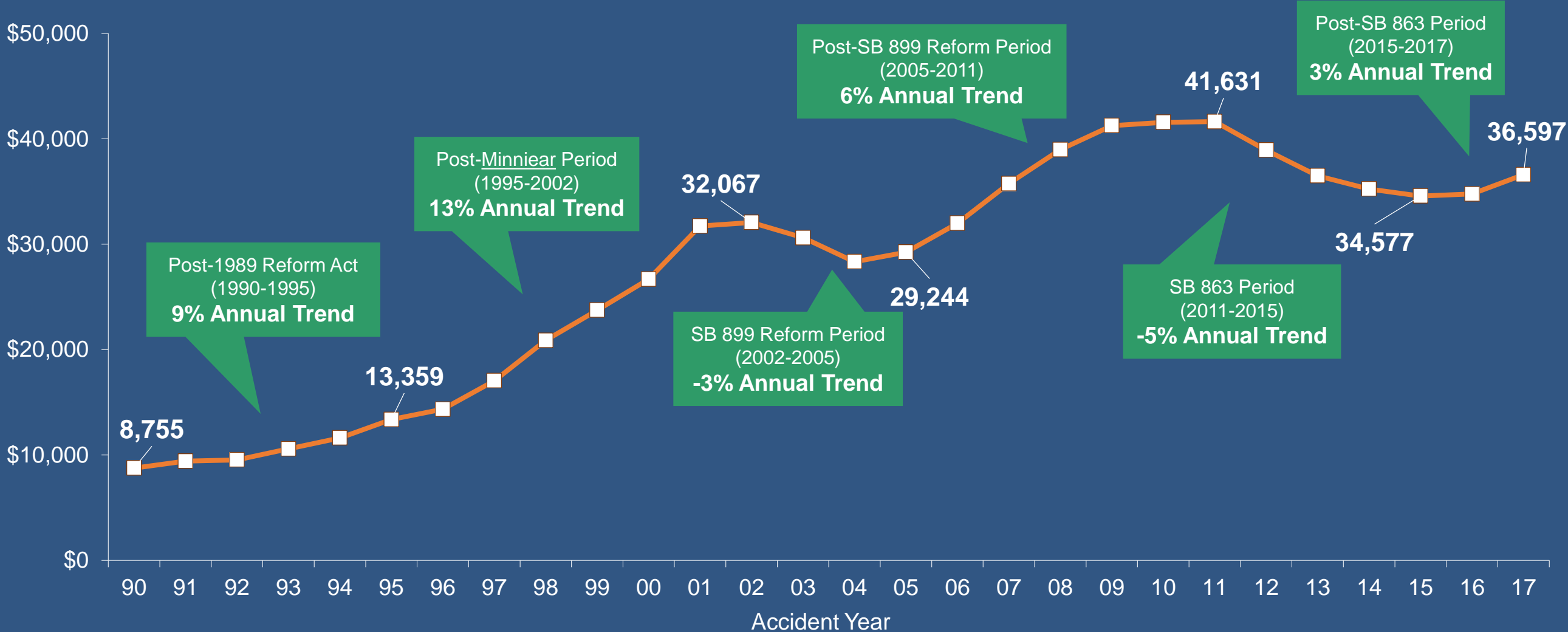
2005 to 2017: -0.6%

2012 to 2017: -1.1%

Agenda Selected: 0.0%

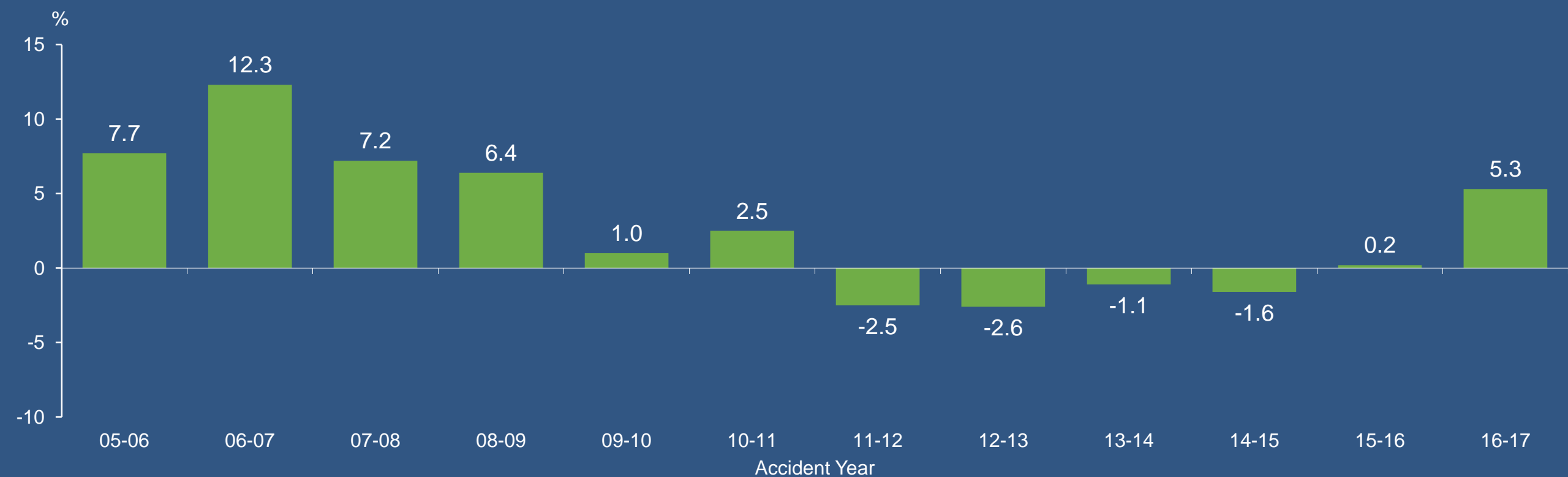
Source: WCIRB projections as of 12/31/2017.

Ultimate Medical per Indemnity Claim (Exhibits 6.3 & 6.4)



Source: WCIRB projections as of 12/31/2017. Includes MCCP costs in all years for consistency.

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



Annual Exponential Trend Based on:

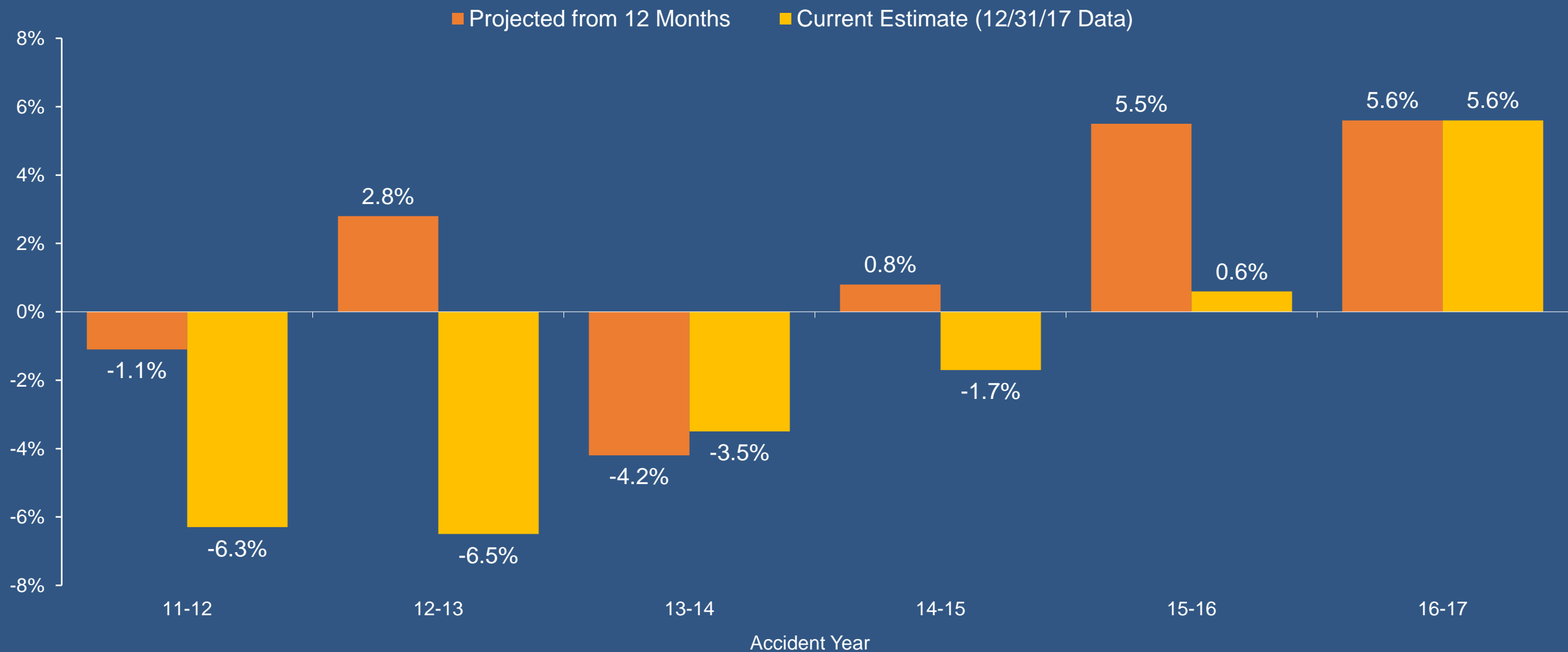
2005 to 2017: +1.9%

2012 to 2017: -0.2%

Agenda Selected: 3.0%

Source: WCIRB projections as of 12/31/2017. Excludes MCCP costs.

Comparison of Projections of Ultimate Medical Severity Changes



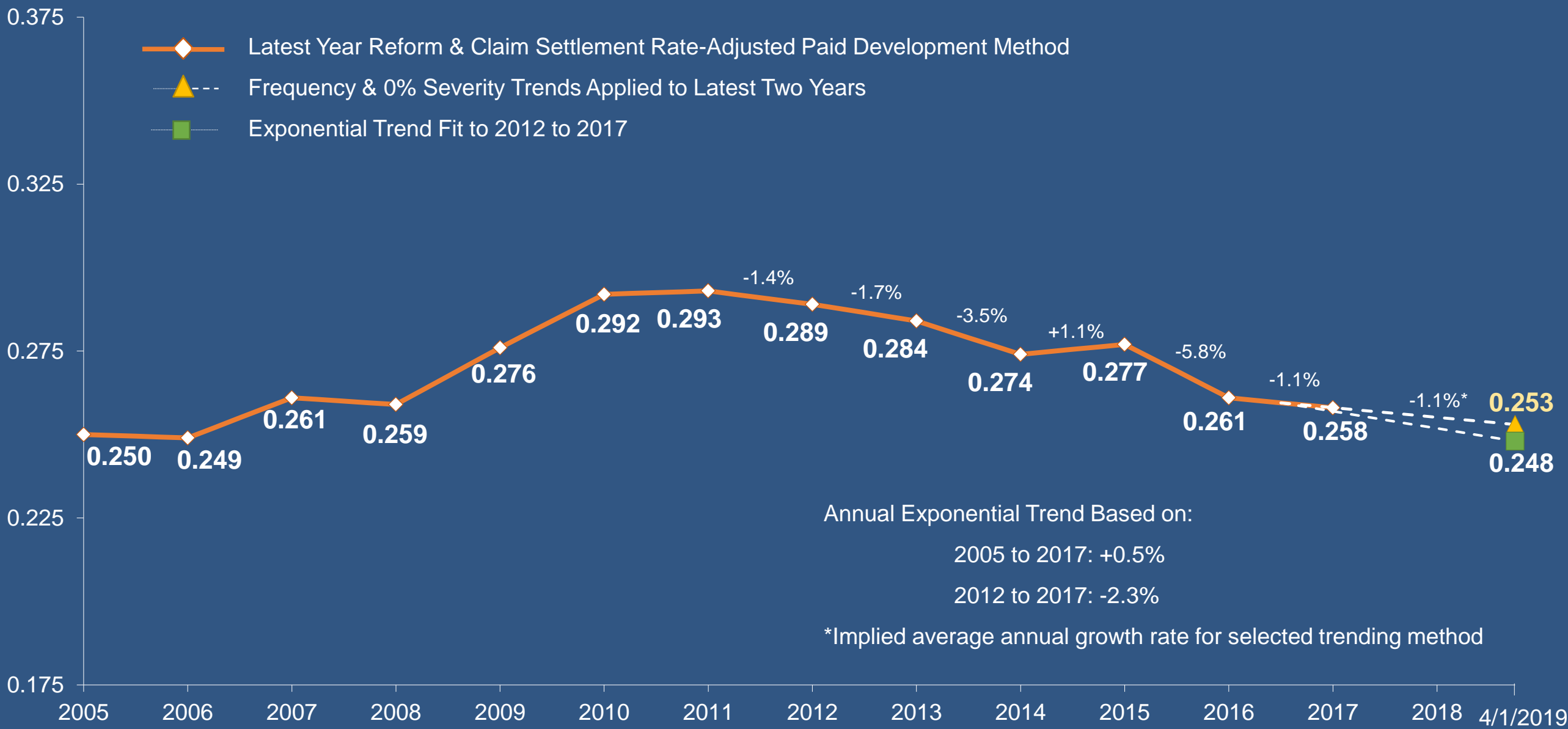
Alternative Trending Methodologies (Item AC18-04-02)

- 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 starting to increase after declines during SB 863 & SB 1160 transition periods
 - Significant medical inflation has historically followed periods of reform
 - Trending from two-year average generally outperformed latest year method in recent review

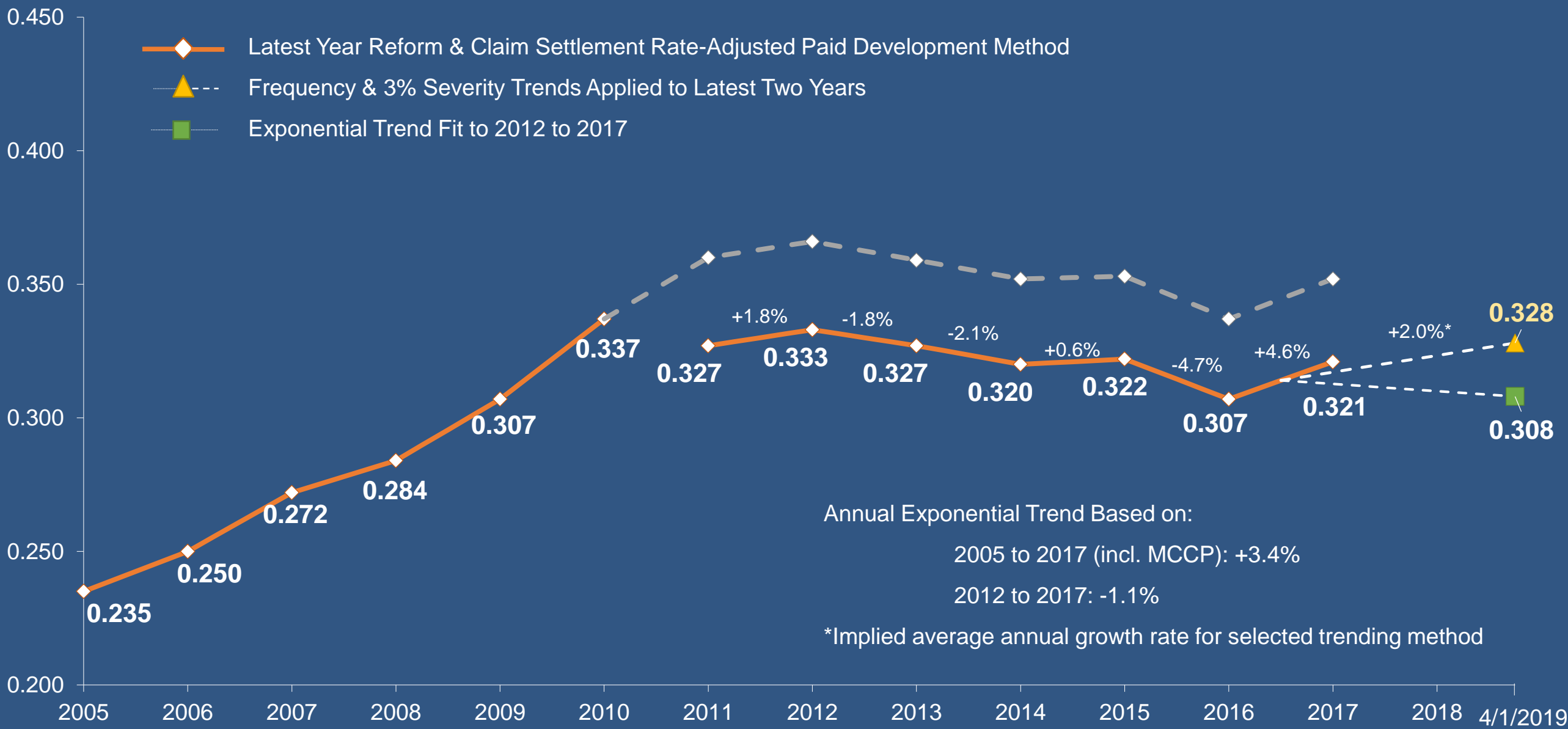
Alternative Trending Methodologies (Item AC18-04-02)

- 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)



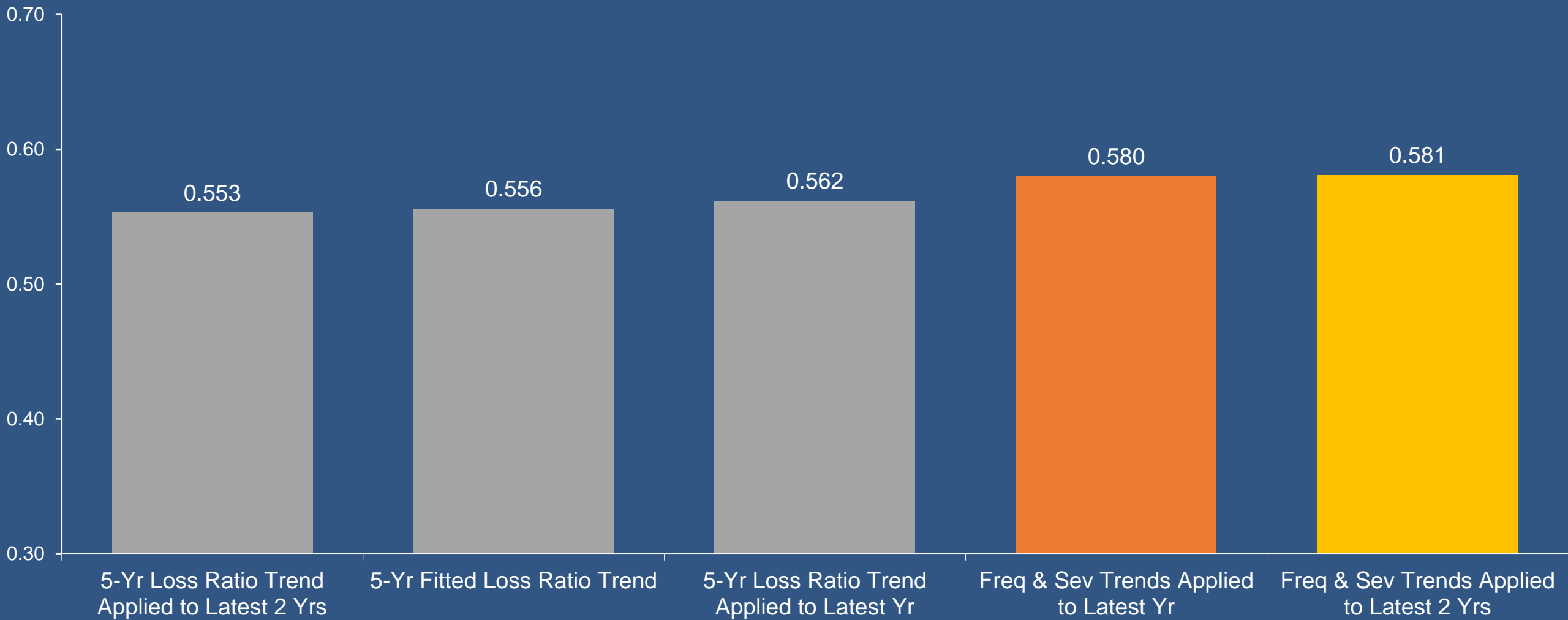
Projected On-level Medical Loss Ratios (Exhibit 7.3)



Projected On-level Loss Ratios under Alternative Trending Methods

Method	Projection
Separate Frequency & Severity Projections (0% Indemnity & 3% Medical) Applied to Latest Two Years (Agenda)	0.581
Separate Frequency & Severity Trends Applied to Latest Year	0.580
5-Year Avg. On-Level Loss Ratio Exponential Trend Applied to Latest Two Years	0.553
5-Year Avg. On-Level Loss Ratio Exponential Trend Applied to Latest Year	0.562
On-Level Loss Ratio Exponential Trend Fit to 2011-2016	0.556

Projected On-level Loss Ratios under Alternative Trending Methods



05

12/31/2017 Loss Adjustment Expense Experience Review



Impact of SB 1160 & AB 1244 on LAE

- Prospective estimate of SB 1160 & AB 1244 lien reforms included savings to LAE (excluding MCCP costs)
- Updated estimate based on 40% lien reduction:

(1) Lien Costs in LAE as % of Loss & LAE (Amended 1/1/17 Filing)	3.4%
(2) SB 1160 Impact on LAE as % of Loss & LAE (-40% x (1))	-1.4%
(3) LAE (Excl. MCCP) as a % of Loss (Amended 1/1/18 Filing)	28.8%
(4) SB 1160 Impact on LAE as a % of LAE ((2) x (1.0 + (3)) / (3))	-6.4%

- Post-SB 1160 ULAE data not available
- Impact on ALAE development projection unclear
- Reflected as adjustment to pre-SB 1160 projected LAE ratios
 - Assumed consistent for both ALAE & ULAE

Projections of ULAE to Loss

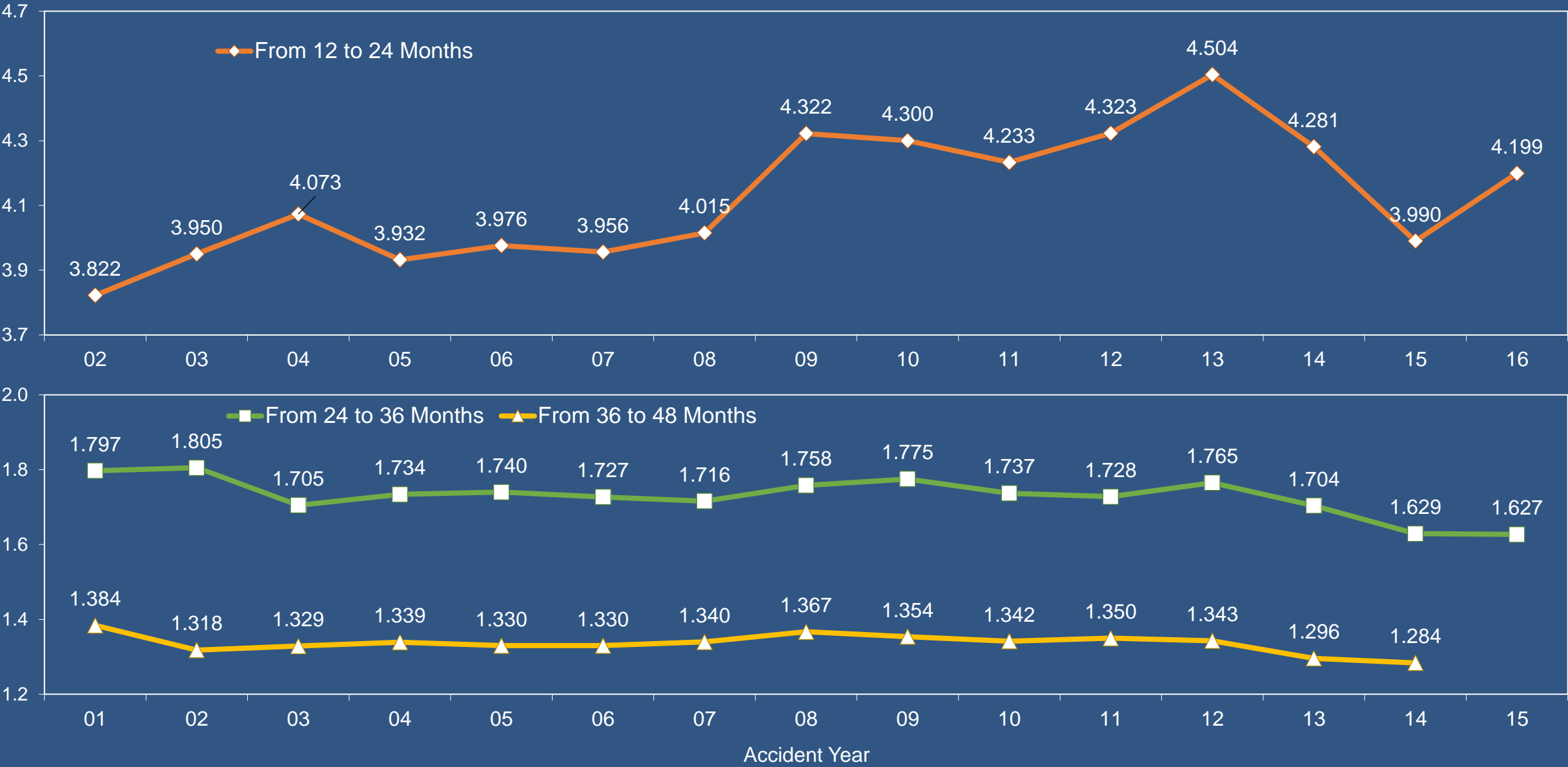
Amended January 1, 2018 Filing Projection

Method	Projection Prior to Impact of SB 1160	Projection After Impact of SB 1160
Paid ULAE per Open Indemnity Claim	11.5%	N/A
Paid ULAE to Paid Losses	9.5%	N/A
Average of Open Indemnity Claim and Paid Loss Projection Methods	10.5%	N/A

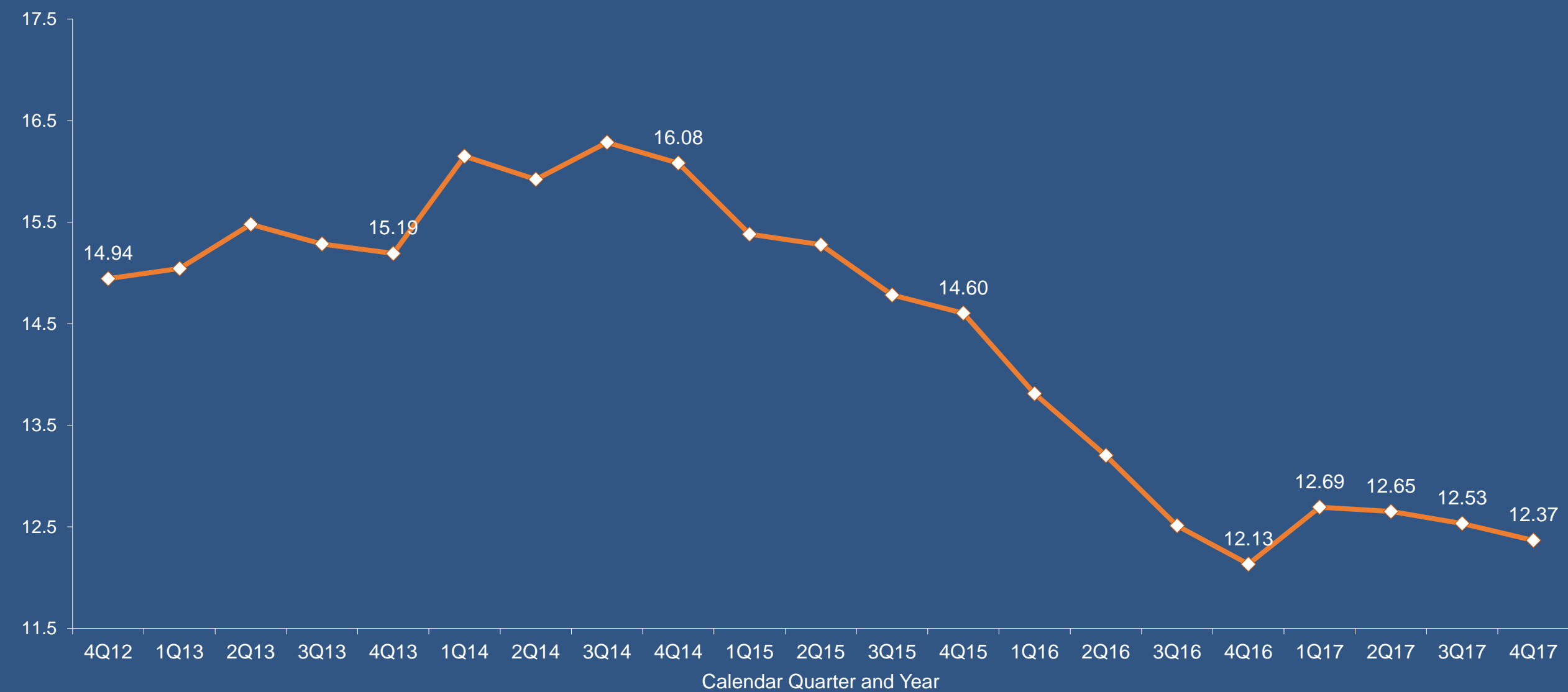
Updated Projection

Method	Projection Prior to Impact of SB 1160	Projection After Impact of SB 1160
Paid ULAE per Open Indemnity Claim	12.3%	11.5%
Paid ULAE to Paid Losses	10.6%	9.9%
Average of Open Indemnity Claim and Paid Loss Projection Methods	11.5%	10.7%

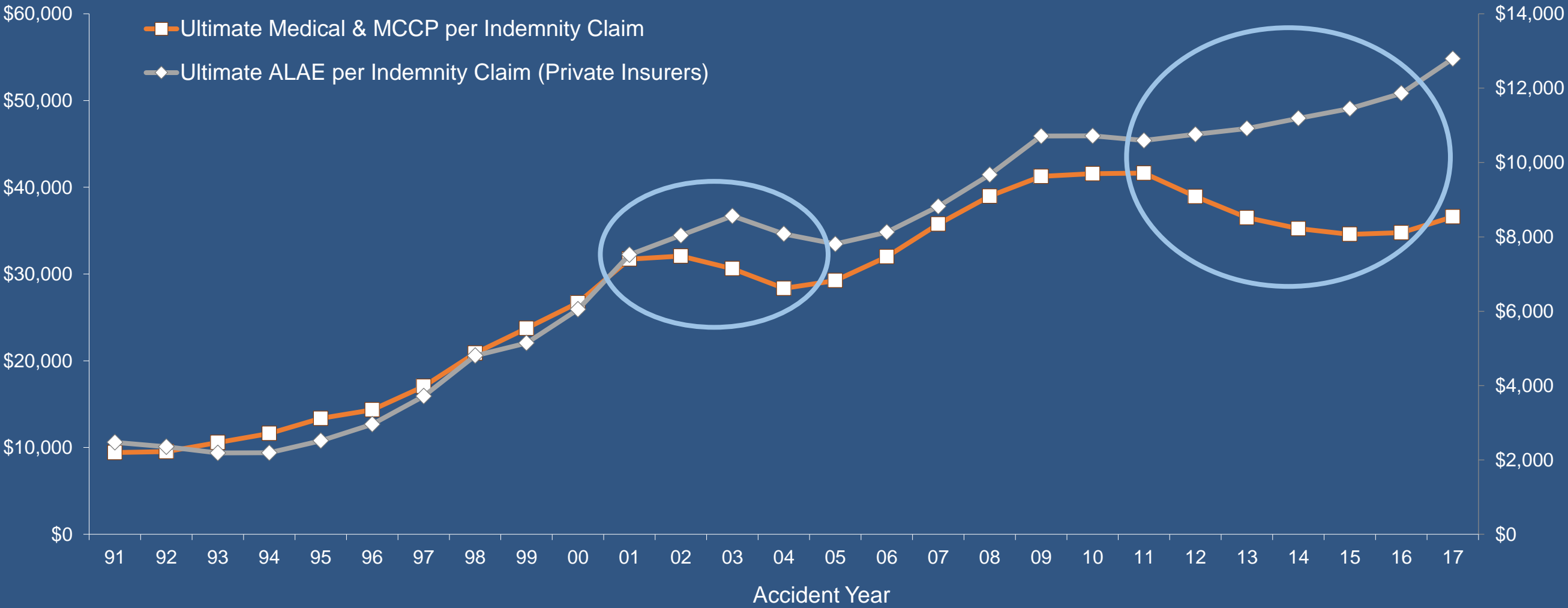
Paid ALAE (Excl. MCCP) Development – Private Insurers (Exhibit 4.2)



Cumulative Paid ALAE Development from 12 to 90 Months

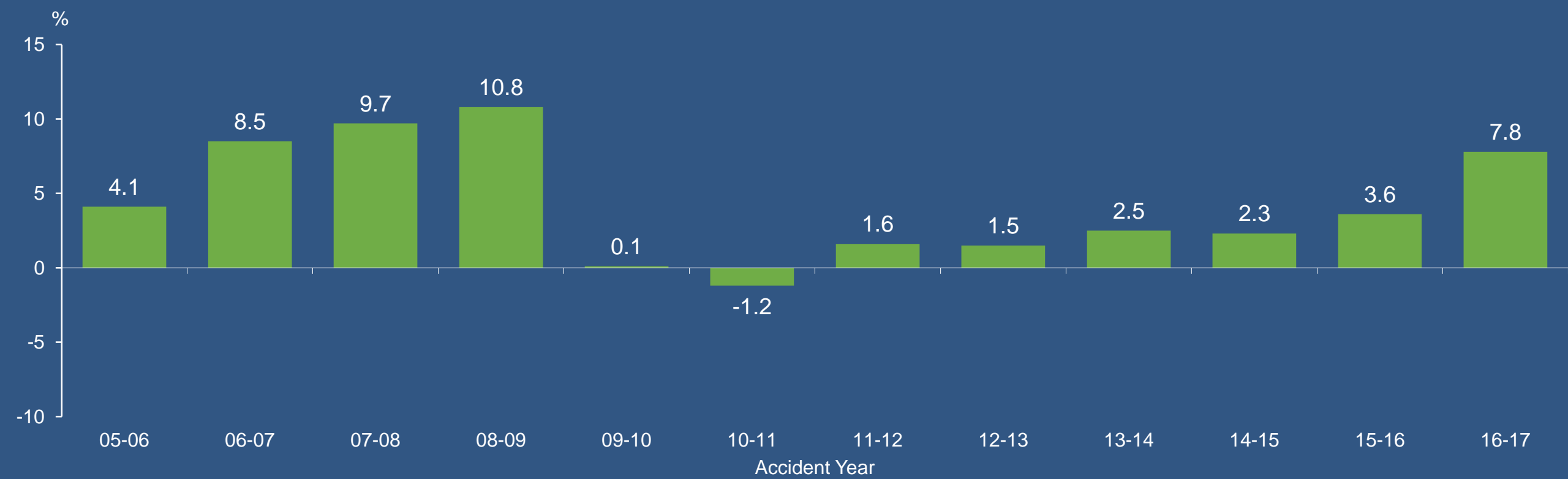


Ultimate Medical and ALAE per Indemnity Claim



Source: WCIRB projections as of 12/31/2017. MCCP costs are included in medical for all years for consistency.

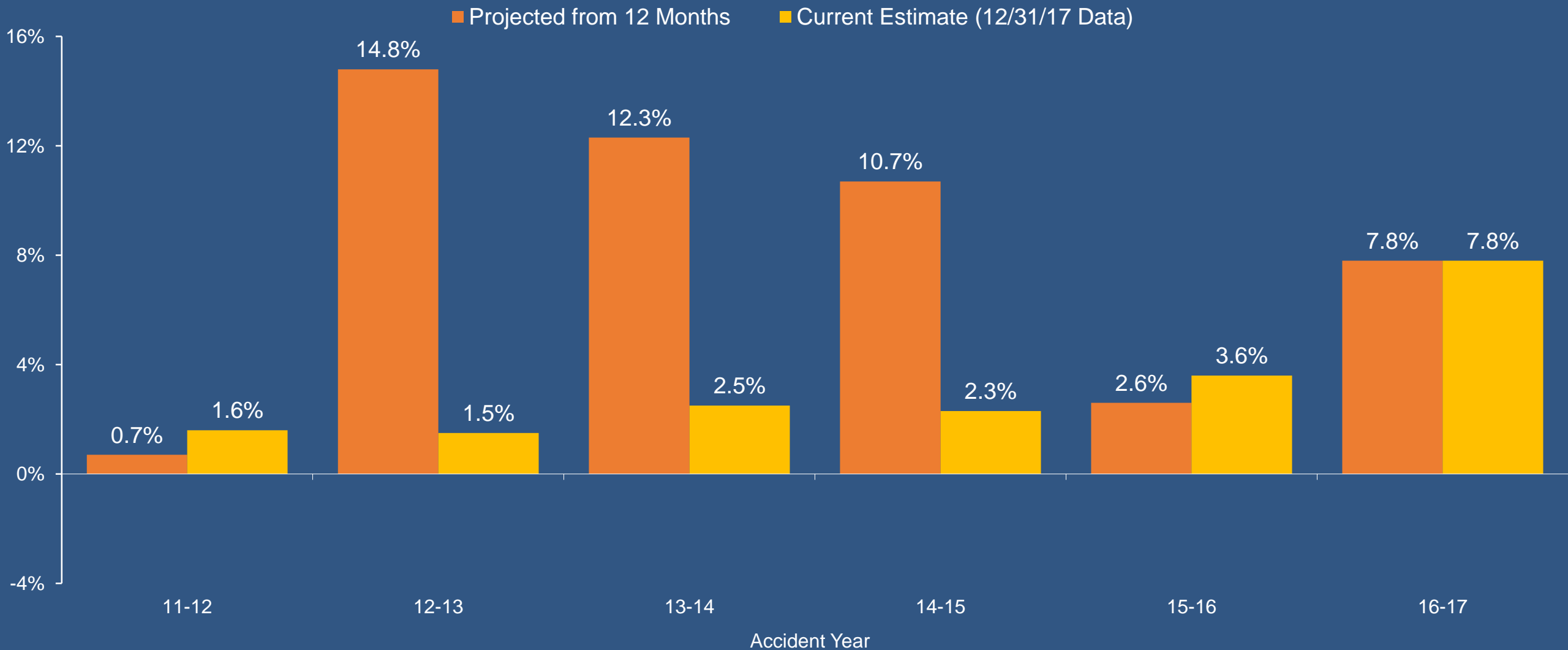
Projected Changes in Ultimate ALAE Severity – Private Insurers (Exhibit 2.2)



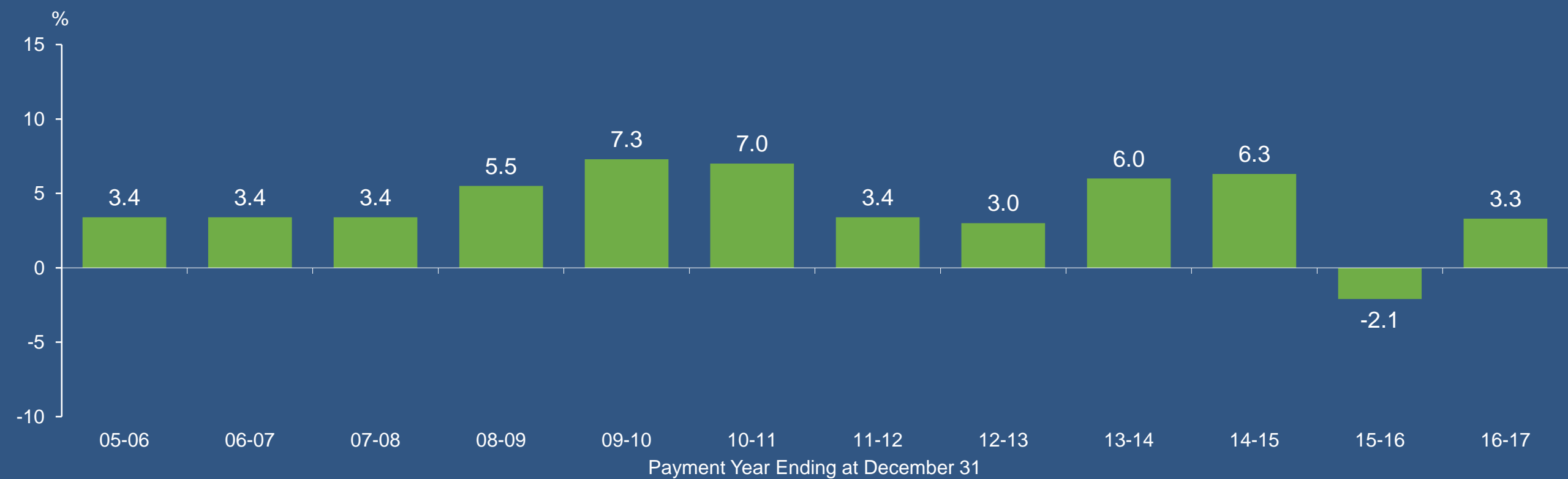
Annual Exponential Trend Based on:
2005 to 2017: +3.6%
2012 to 2017: +3.3%

Source: WCIRB projections as of 12/31/2017. Excludes MCCP costs.

Comparison of Projections of Ultimate ALAE Severity Changes



Change in Incremental Paid ALAE per Open Indemnity Claim – Private Insurers (Exhibit 3)



Annual Exponential Trend Based on:

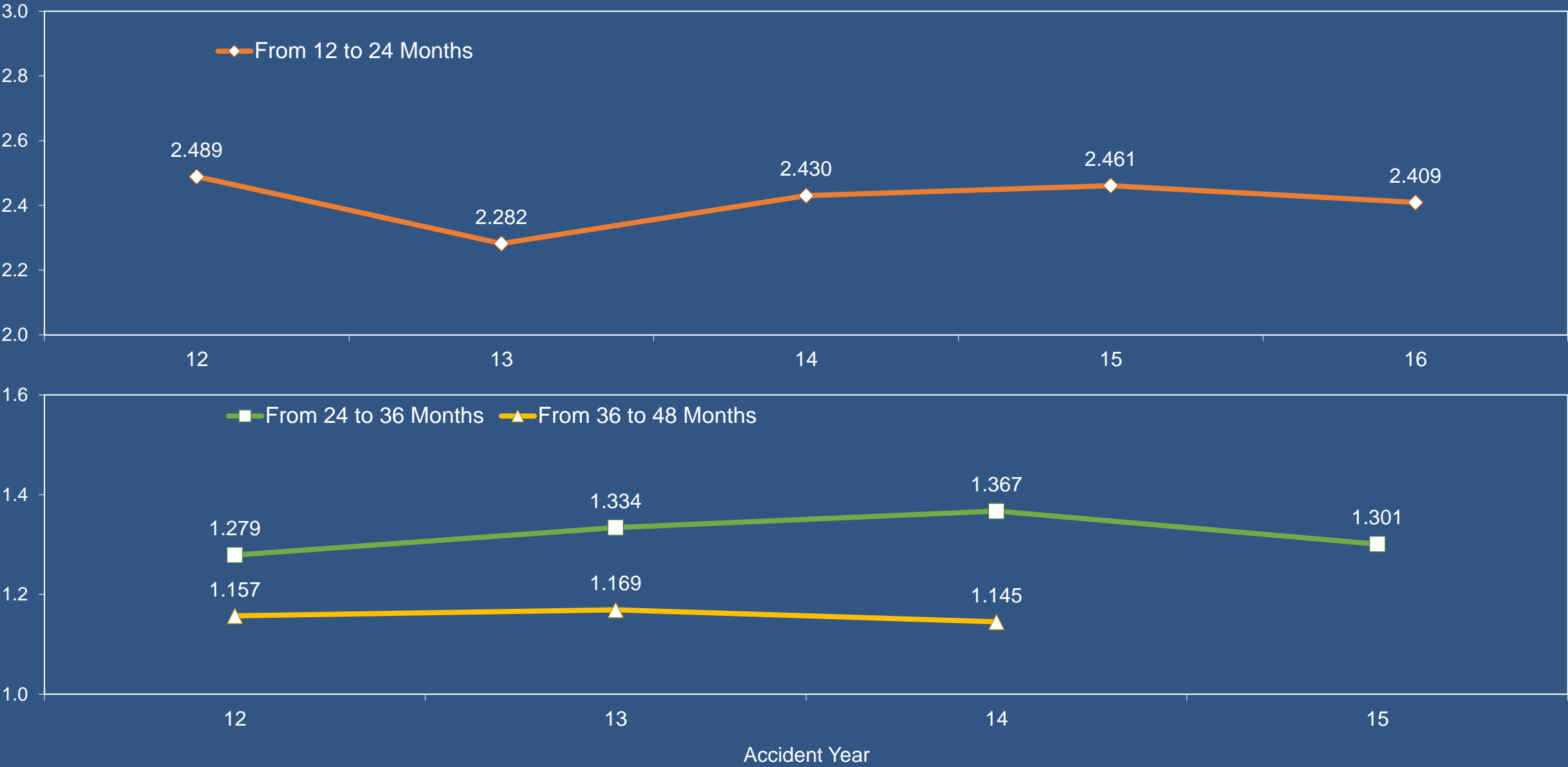
2006 to 2017: +4.6%

2012 to 2017: +3.3%

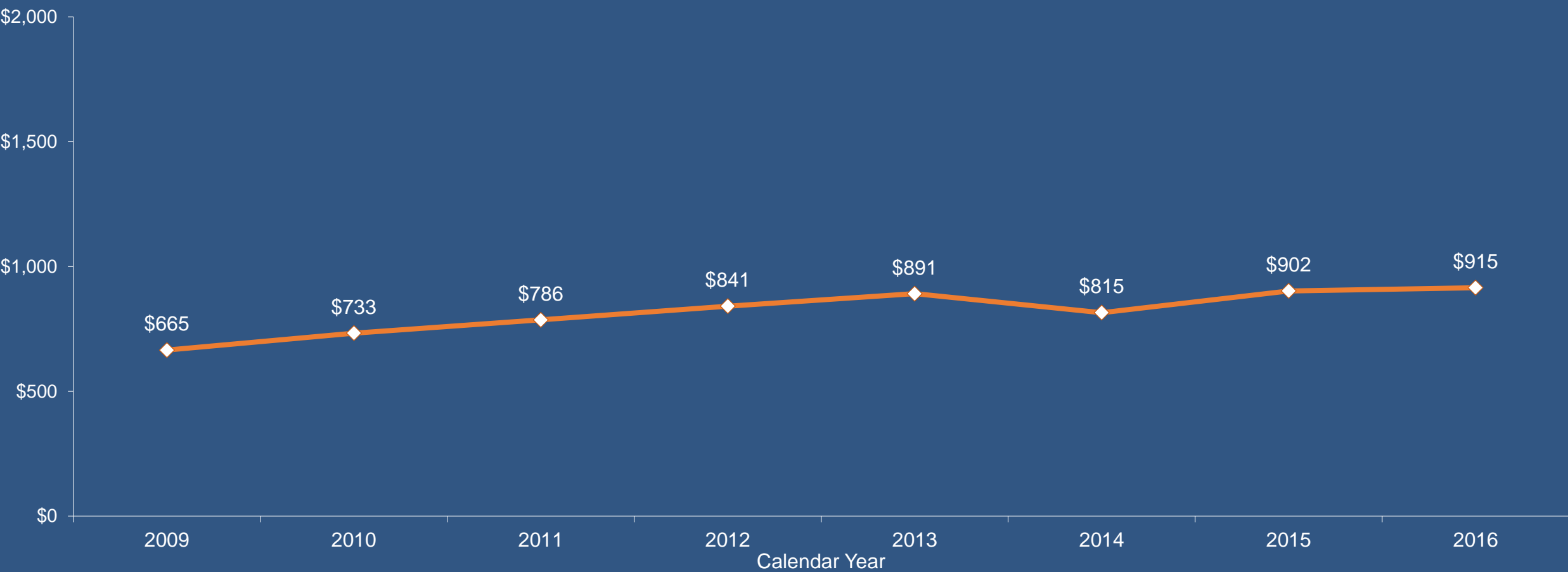
Agenda Selected ALAE Severity Trend: +4.0%

Source: WCIRB projections as of 12/31/2017. Excludes MCCP costs.

Paid MCCP Development (Exhibit 7.1)

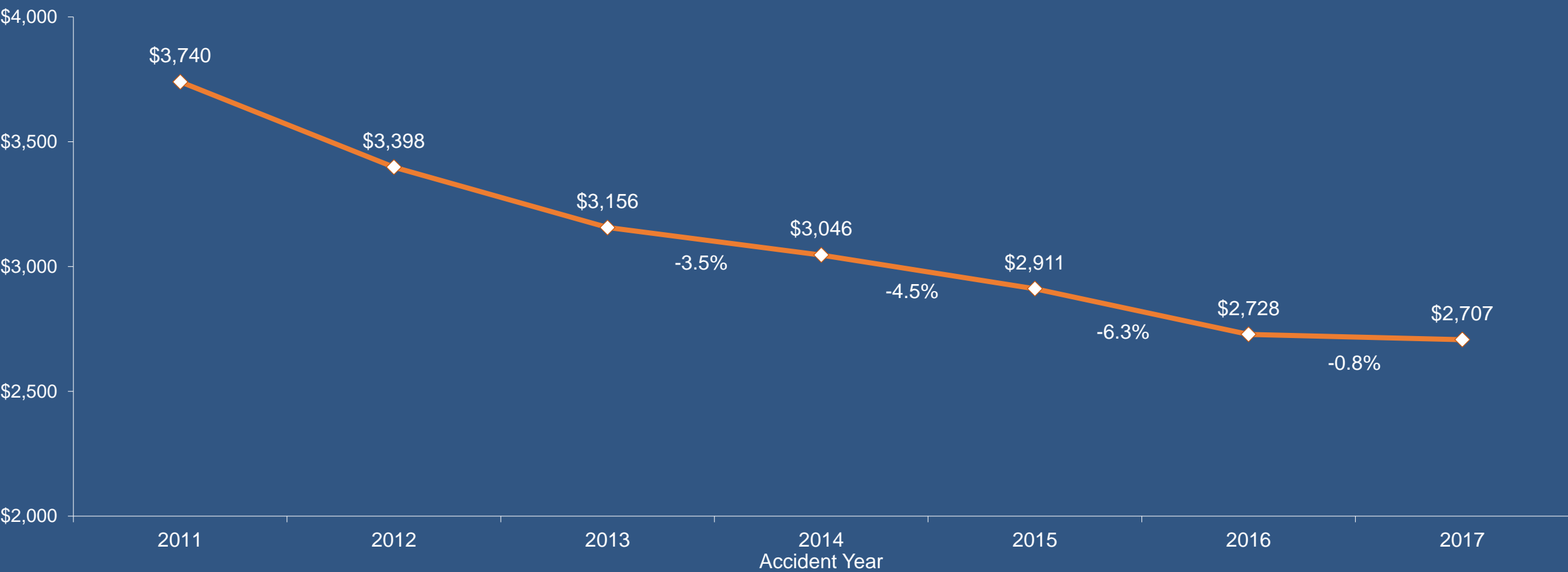


Calendar Year Paid MCCP per Indemnity Claims Inventory (Exhibit 5)



Annual Exponential Trend Based on:
2009 to 2016: +4.2%

Projected Ultimate MCCP per Indemnity Claim (Exhibit 6)



Annual Exponential Trend Based on:
2012 to 2017: -4.5%

Agenda Selected MCCP Severity Trend: **+0.0%**

Projections of ALAE and Combined LAE to Loss

Amended January 1, 2018 Filing Projection

Method	Projection Prior to Impact of SB 1160	Projection After Impact of SB 1160
Projected Ultimate ALAE (Excl. MCCP) per Indemnity Claim	18.3%	N/A
Projected Ultimate MCCP per Indemnity Claim	4.3%	N/A
Total LAE Ratio	33.1%	N/A

Updated Projection

Method	Projection Prior to Impact of SB 1160	Projection After Impact of SB 1160
Projected Ultimate ALAE (Excl. MCCP) per Indemnity Claim	19.8%	18.5%
Projected Ultimate MCCP per Indemnity Claim	4.0%	4.0%
Total LAE Ratio	35.3%	33.2%

06

Impact of the ACA on California Workers' Compensation

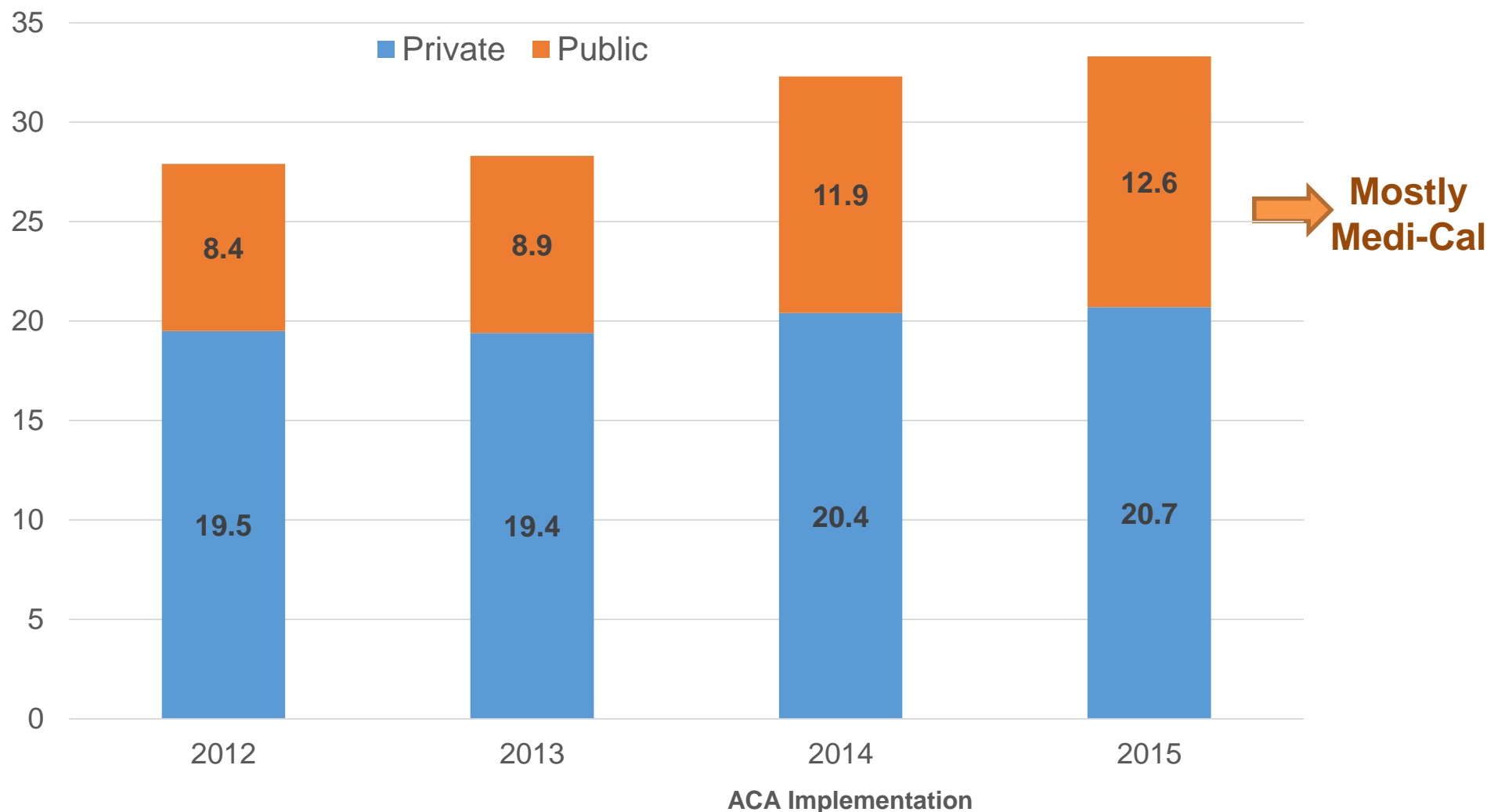


Summary of Presentation

- Background on the ACA
- Research Questions
- Study Approach
- Preliminary Findings

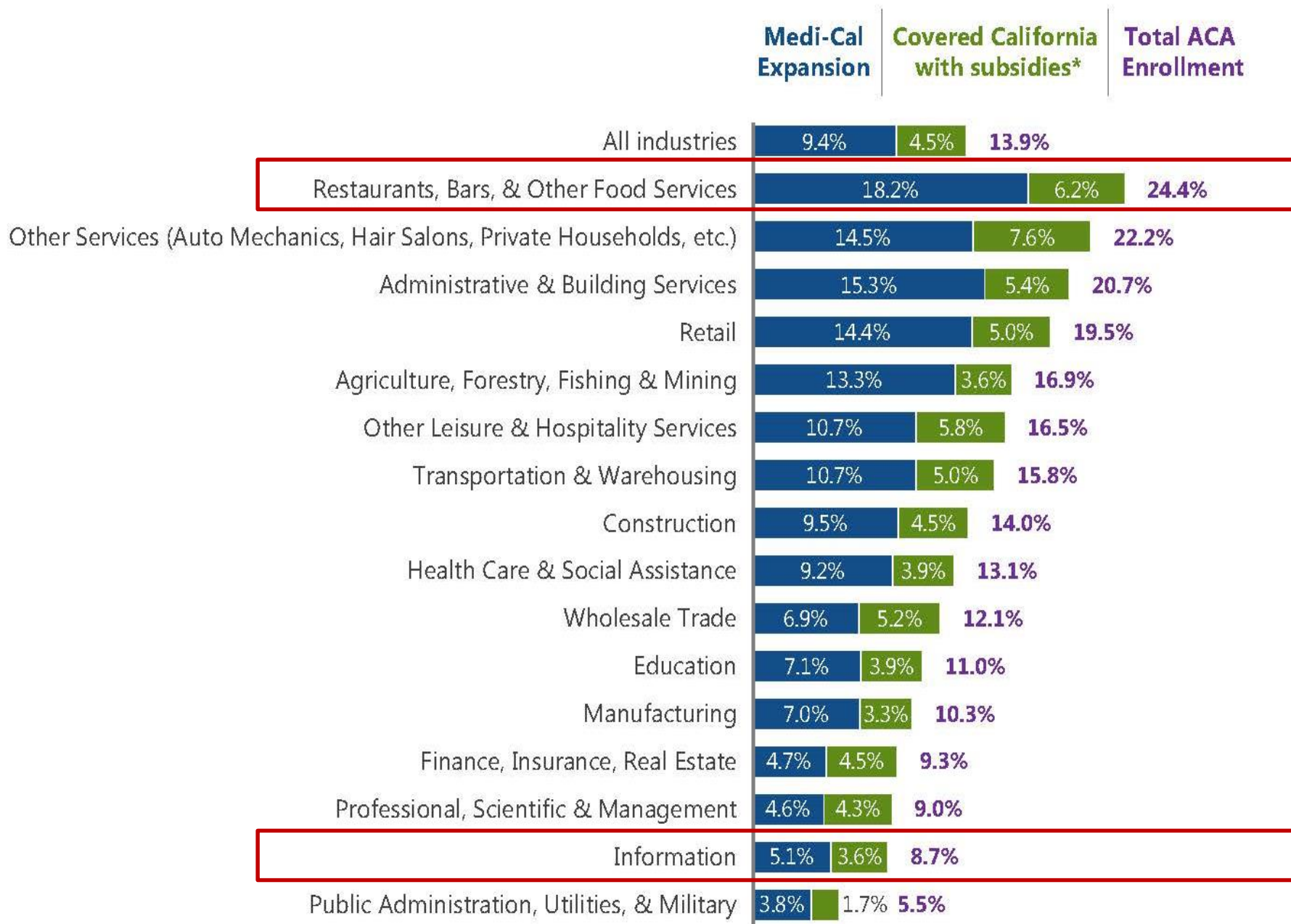
ACA Increases Group Health Insurance Coverage

Enrollment in Group Health Insurance, 2012 to 2015
(in millions)



Source: *California Health Insurers: Two Years After Reform*, California Health Care Foundation (2017).
<https://www.chcf.org/wp-content/uploads/2017/12/PDF-CaliforniaHealthInsurers2017.pdf>

Impact of the ACA Varies by Industrial Sectors

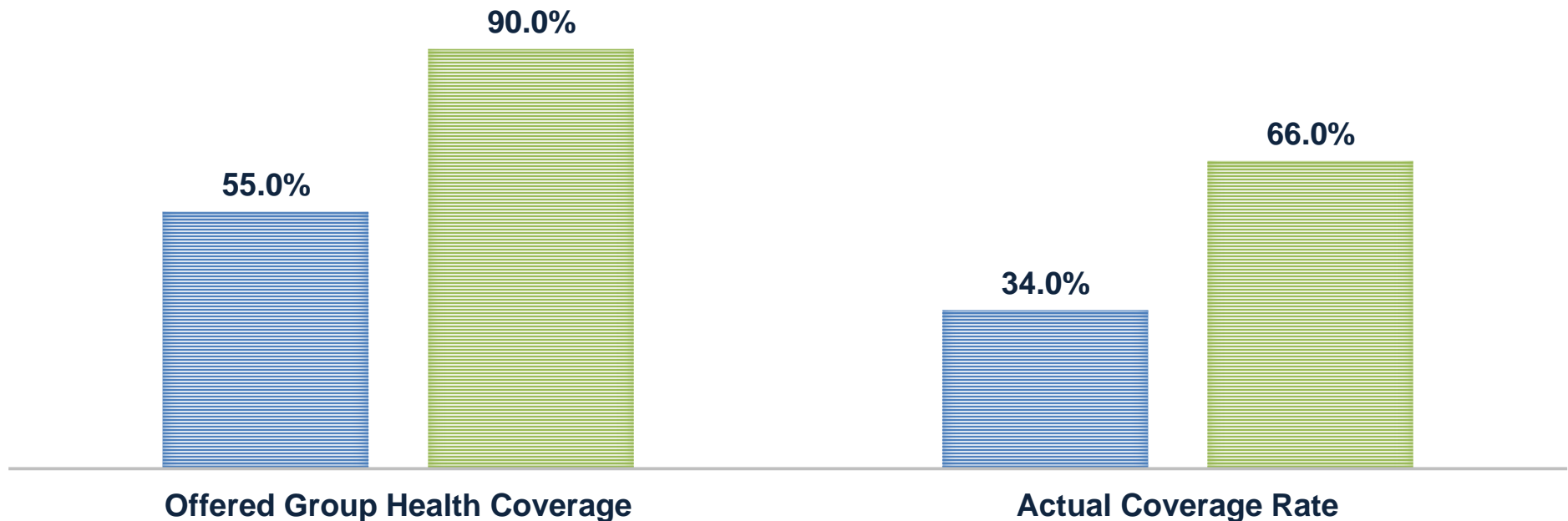


Source: *Which California Industries Would be Most Affected by ACA Repeal and Cuts to Medi-Cal?* U.C. Berkeley Labor Center, Lucia, L., Dietz, M. and Jacobs, K. (2017).

ACA Disproportionally Benefits Workers in Small Businesses

Employer-Sponsored Group Health Insurance, 2014

■ Small Businesses (50 or fewer employees) ■ Large Businesses (51+ employees)

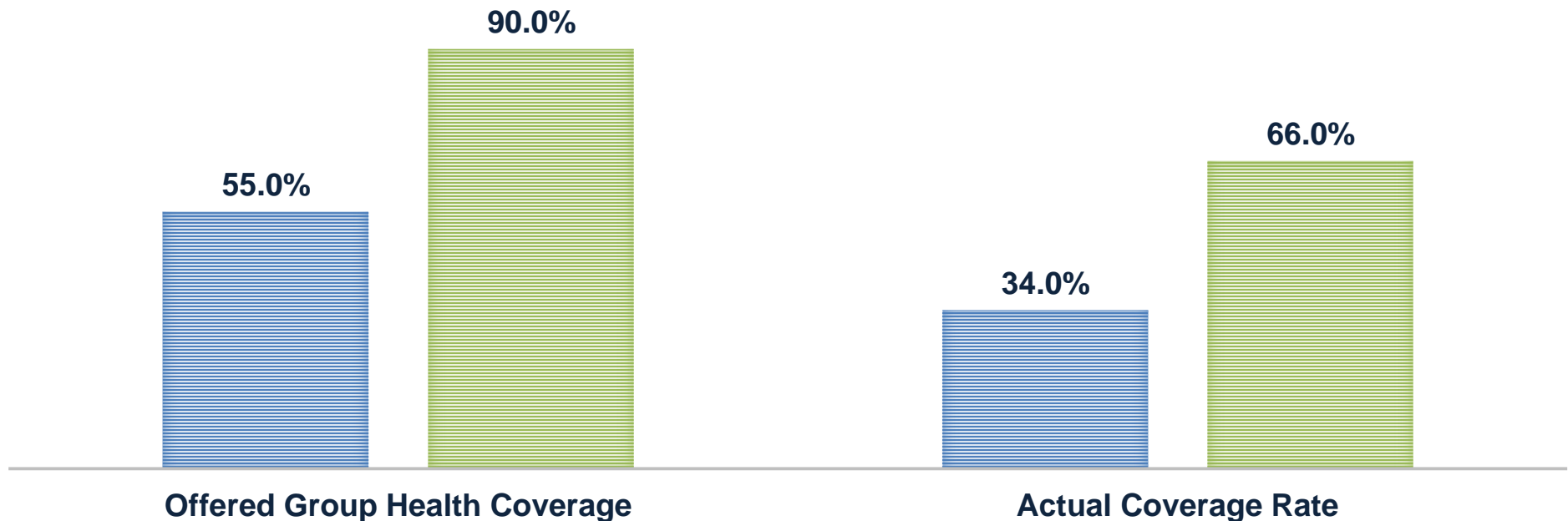


Source: *California Health Interview Survey*, 2014; Siemons R., Lucia L. and Jacobs K. (2017). California's self-employed and small business employers experienced large health coverage gains under ACA.

ACA Disproportionally Benefits Workers in Small Businesses

Employer-sponsored Group Health Insurance, 2014

■ Small Businesses (50 or fewer employees) ■ Large Businesses (51+ employees)



In 2015, 20% of the workers in small businesses gained health coverage through the ACA, while only 11.4% of those working in large businesses enrolled.

Source: *California Health Interview Survey*, 2014; Siemons R., Lucia L. and Jacobs K. (2017). California's self-employed and small business employers experienced large health coverage gains under ACA.

Research Questions

Did ACA affect:

- **Access to Care?**
- **Fees for Physician Services?**
- **Claim Frequency?**
- **Diagnostic Mix?**

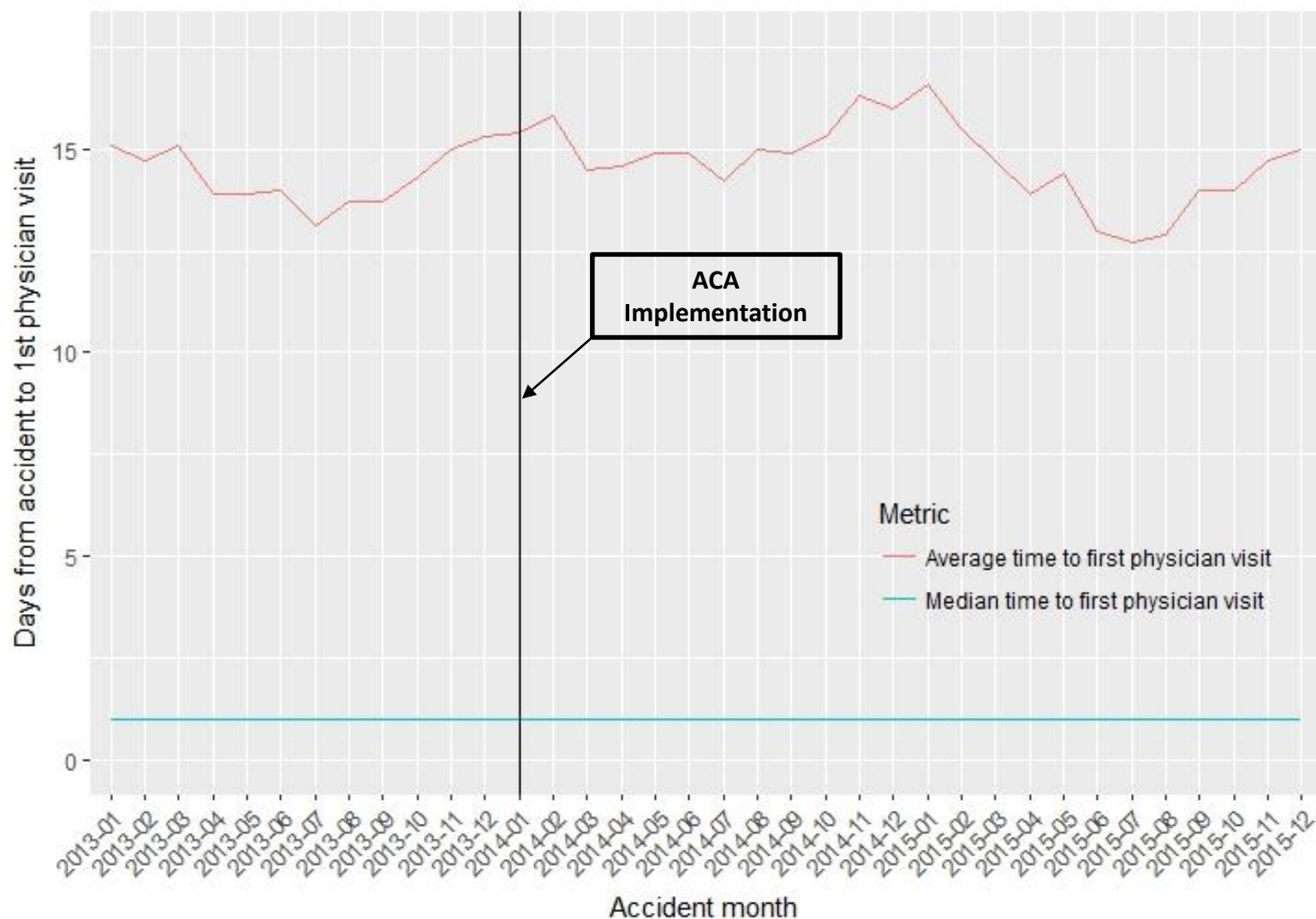
Study Approach

- Analyzed WCIRB's MDC transactional data:
 - Accident dates 2013 through 2015
 - 12-month development time
 - Included Insurer Groups fully reporting MDC from 2013 to 2016
 - Excluded Medical Liens
- MDC data matched to USR data for class and employer size at policyholder level
- Compared employers more likely to be impacted by the ACA to those less likely to be affected

Access to Care: Time to First Physician Visit

MDC only data (N=859,121)

- Hypothesis: Newly insured individuals create additional demands for providers, causing delays in accessing to care among injured workers.

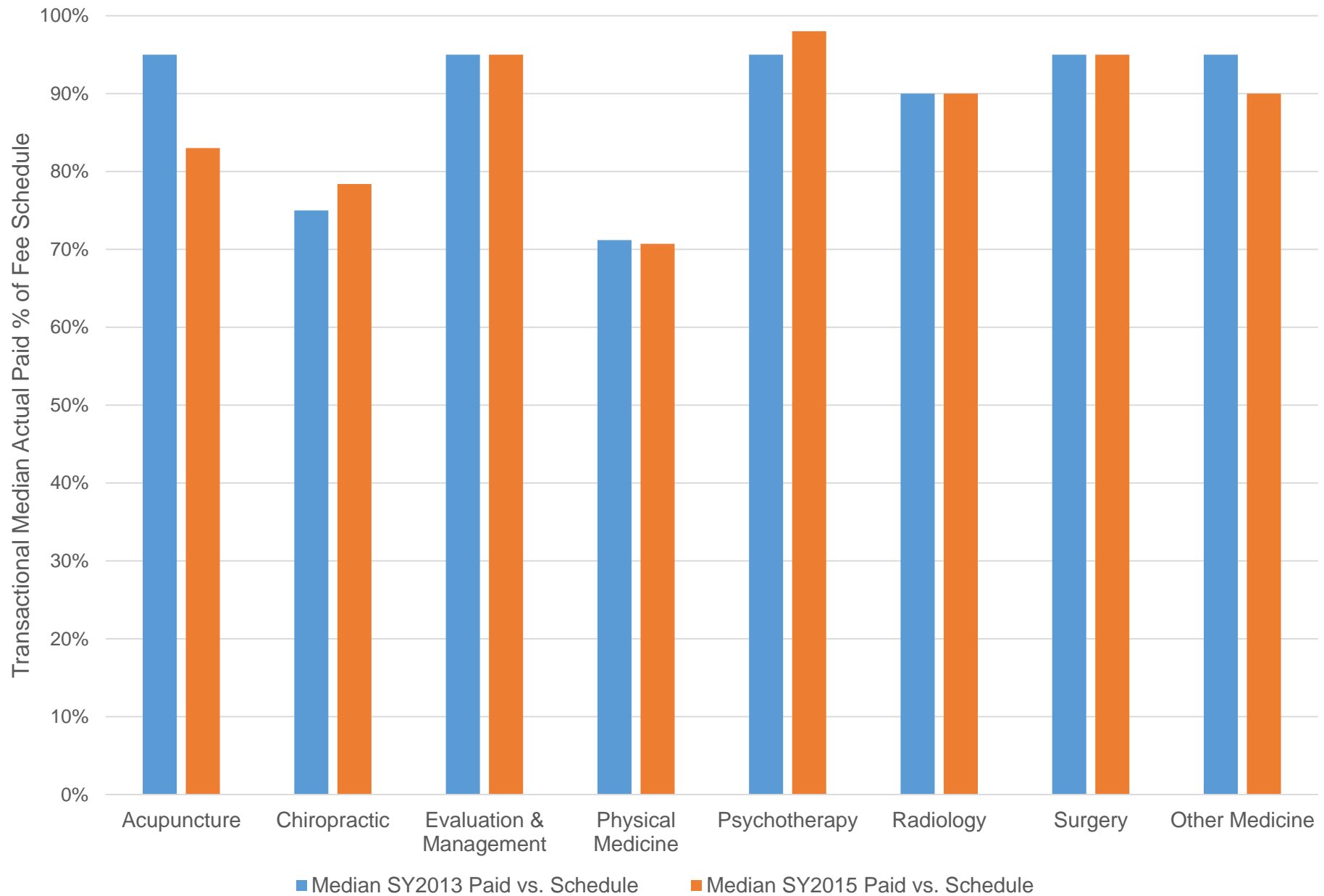


Fees for Physician Services

- Hypothesis:
 - Newly insured individuals create additional demand for providers, affecting fee schedule discounts
- Approach:
 - Compare actual payments to the maximum amounts allowable by the RBRVS (fee discounts)
 - Compare fee schedule discounts before the ACA to those after the ACA
- Findings:
 - No significant impact

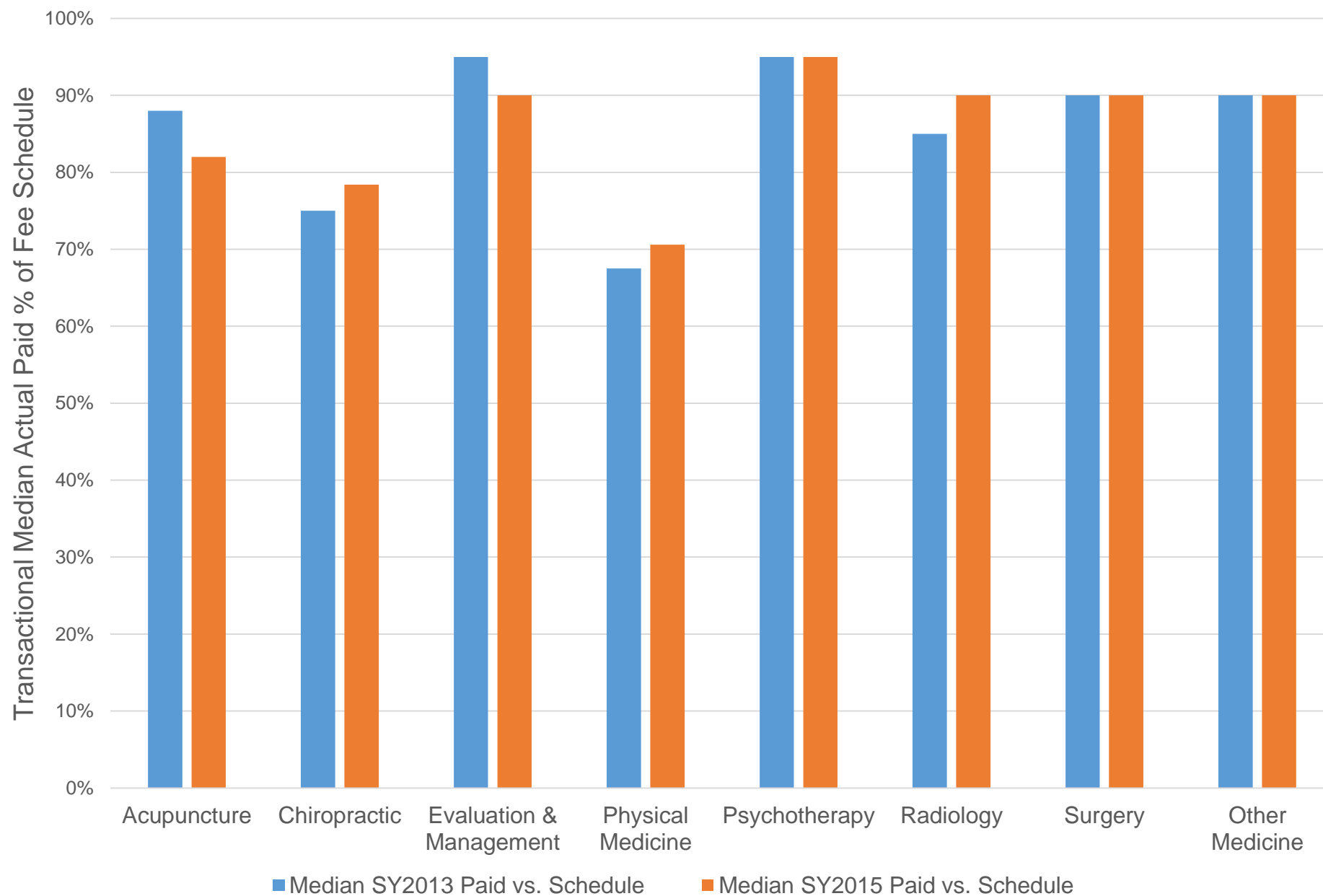
Fees for Services by Primary Care Providers

Actual Paid % of Maximum Fee Schedule



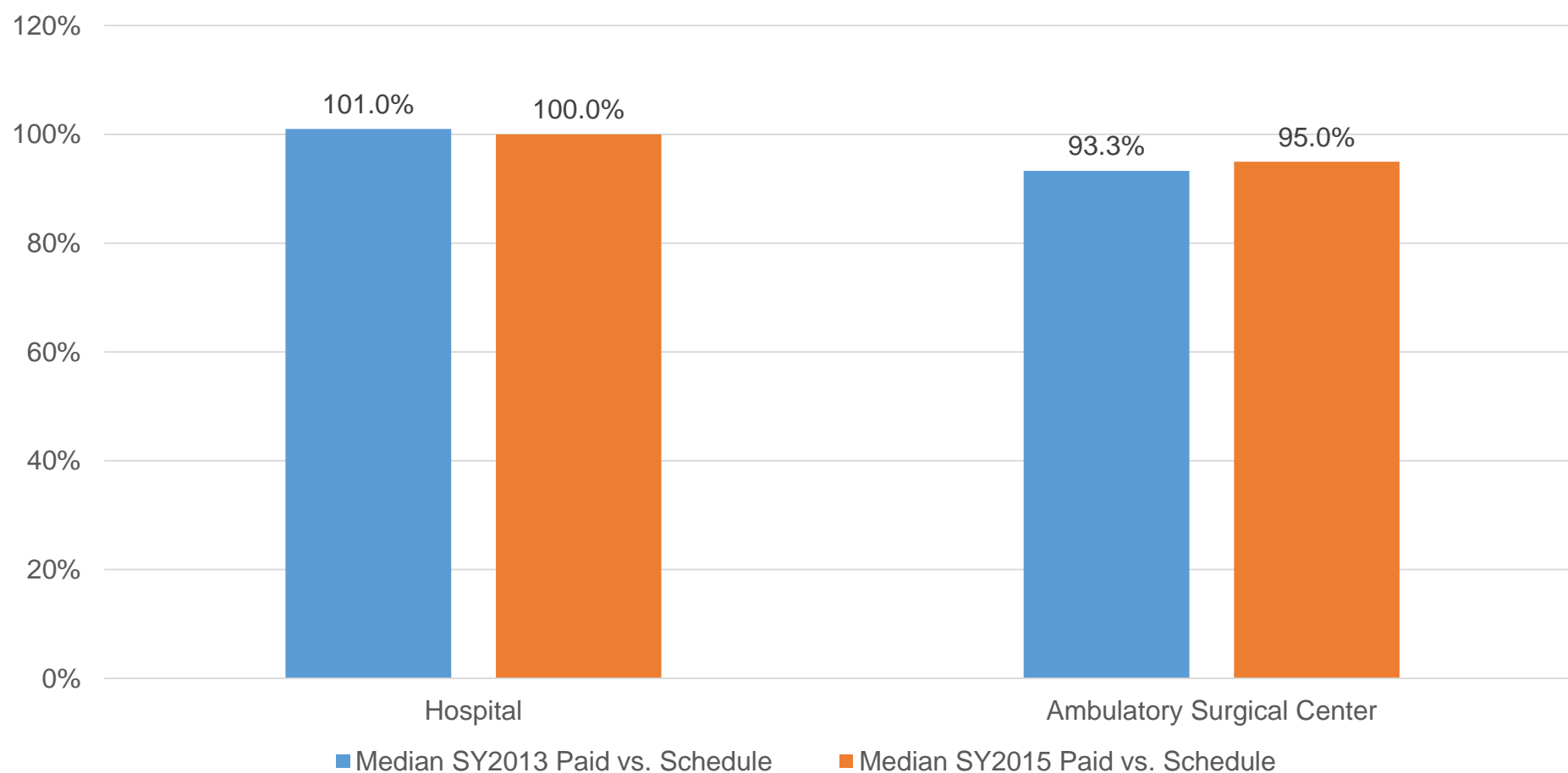
Fees for Services by Specialists

Actual Paid % of Maximum Fee Schedule



Fees for Physician Services (...continued)

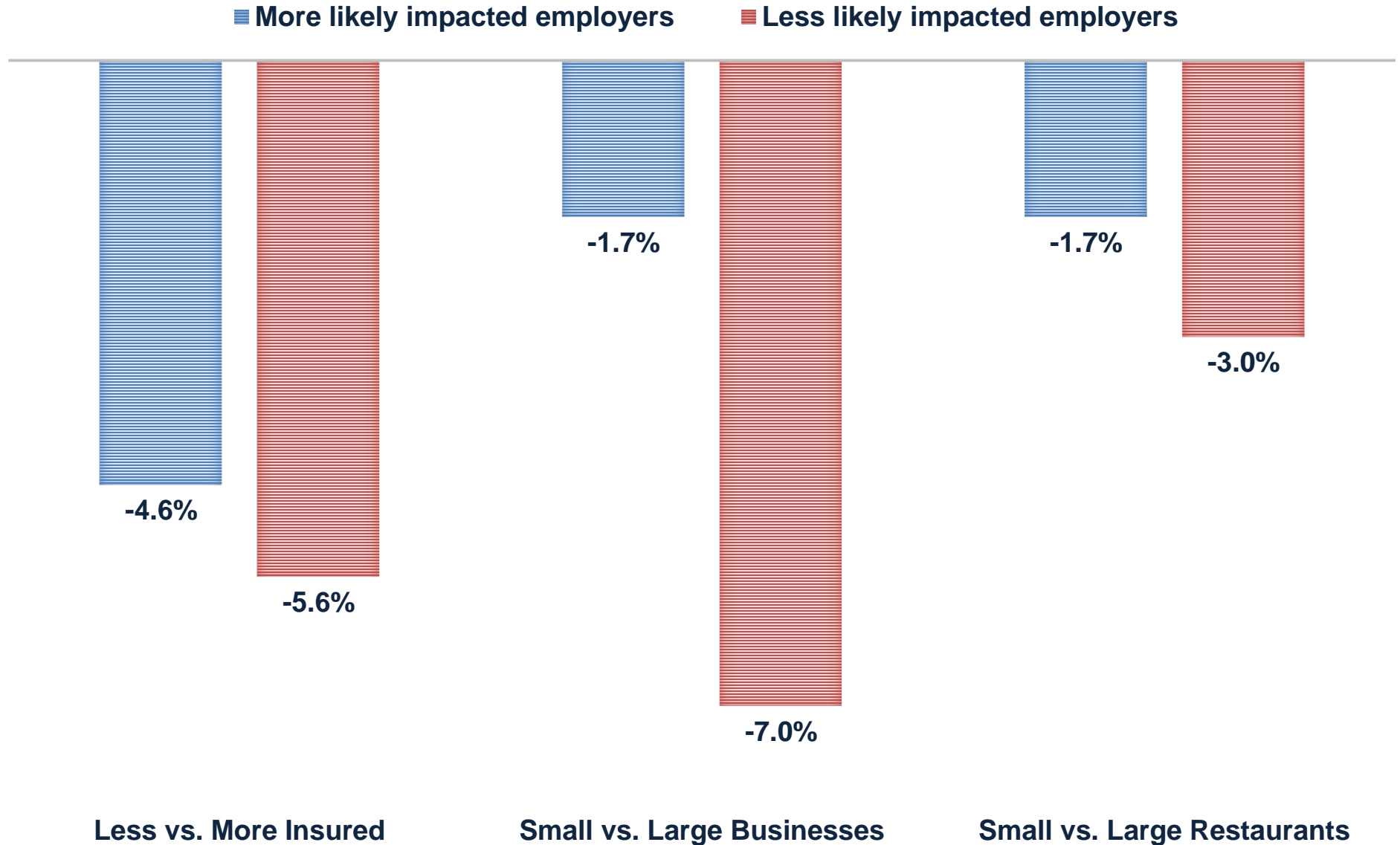
Outpatient Fee Schedules
Actual Paid % of Maximum Fee Schedule by Setting



Potential ACA Impacts on Claim Frequency

- Hypothesis
 - Greater availability of health care benefits for workers due to the ACA impacts the frequency of workers' compensation claims
- Approach
 - Compare pre-ACA overall frequency to post-ACA frequencies
 - Compare frequency changes of groups with significantly more workers having access to health care benefits due to ACA to groups less affected by ACA
- Findings
 - No ACA impact shown

Claim Frequency Change, Pre-ACA 2013 to Post-ACA



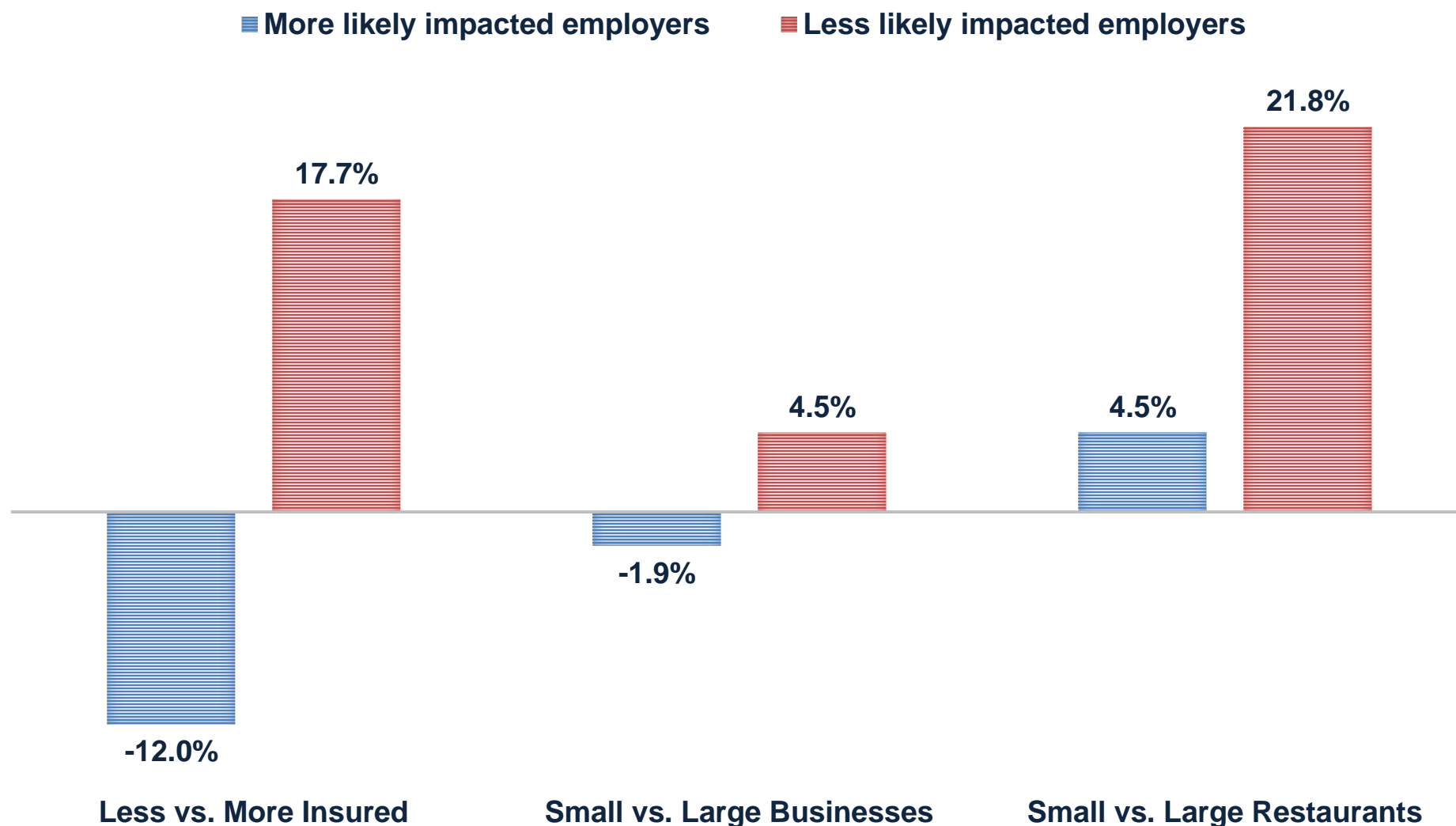
Expected Change vs. Actual Change in Claim Frequency, Pre-ACA to Post-ACA

Claim Frequency, PY2013 to PY2015	Expected Greater ACA Impact	Actual Greater Impact
Less vs. More Insured	Less	More
Small vs. Large Businesses	Small	Large
Small Restaurants vs. Large Restaurants	Small	Large

Potential ACA Impact on Frequency of Soft Tissue Injuries

- Hypothesis:
 - Soft tissue injuries not always clearly linked to a specific workplace event
 - Filing of WC claim may depend on availability of group health coverage
- Approach
 - Compare pre-ACA overall frequency of soft tissue claims to post-ACA frequencies
 - Compare frequency changes of groups with significantly more workers having access to health care benefits due to ACA to groups less affected by ACA
 - Use USR codes and ICD codes to identify soft tissue injuries
- Findings
 - Indications of significant ACA impact of soft tissue claims

Change in Frequency of Claims with Soft Tissue Injuries Pre-ACA to Post-ACA



Expected Change vs. Actual Change in Frequency in Claims with Soft Tissue Injuries, Pre-ACA to Post-ACA

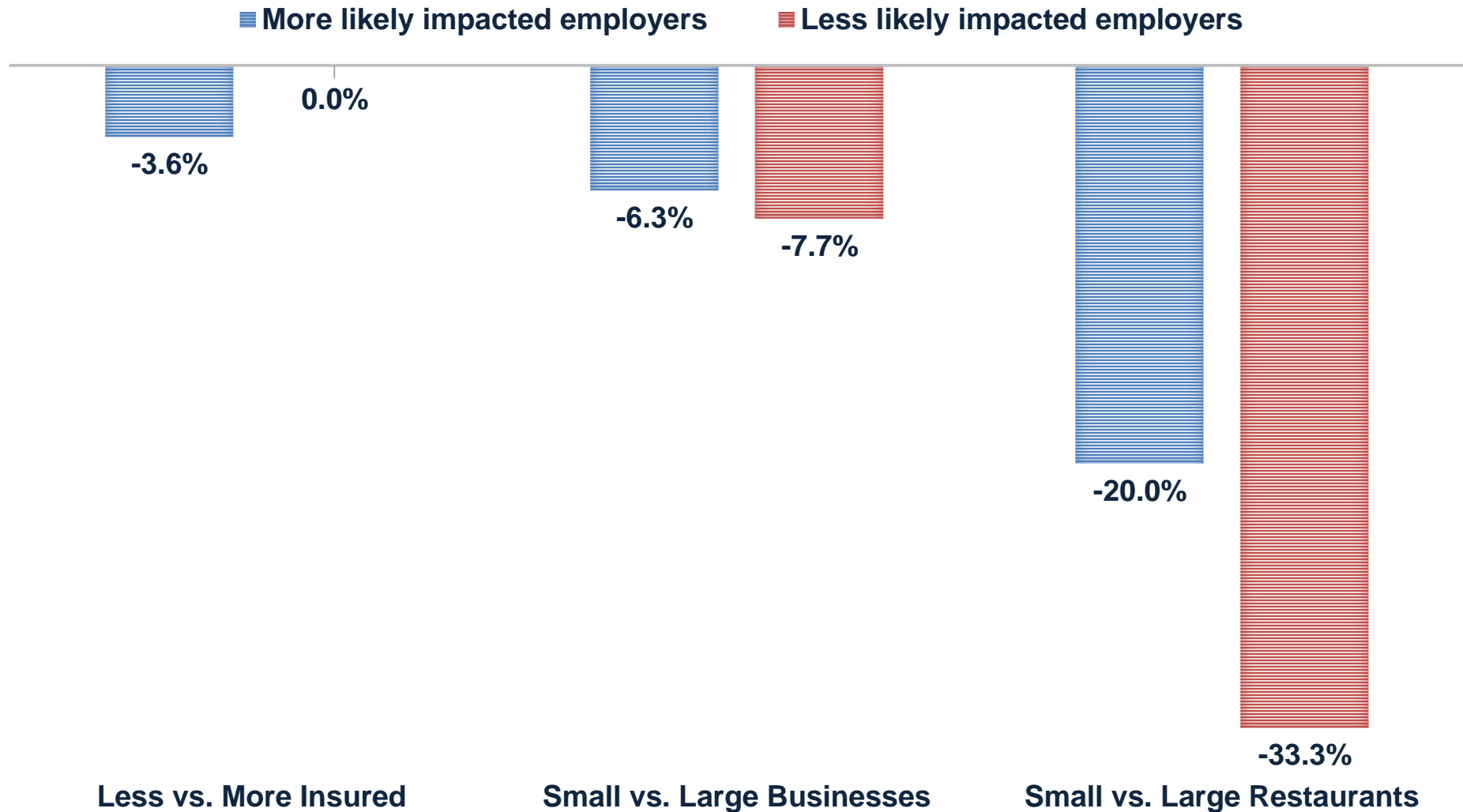
Frequency in Claims with Soft Tissue Injuries, Pre-ACA to Post-ACA	Expected Greater ACA Impact	Actual Greater Impact	Statistical Significance
Less vs. More Insured	Less	Less	Significant
Small vs. Large Businesses	Small	Small	Not Significant
Small Restaurants vs. Large Restaurants	Small	Small	Significant

Potential ACA Impact on Diagnostic Mix – Comorbidities

- Hypothesis
 - Greater availability of healthcare benefits to workers under ACA will reduce the treatment of co-morbidities in the workers' compensation system.
- Approach
 - Compare pre-ACA share of claims with co-morbidities to post-ACA levels
 - Compare co-morbidity patterns of groups with significantly more workers having access to health care benefits due to ACA to groups less affected by ACA
 - Use ICD codes to identify co-morbidity diagnosis
- Findings: Available MDC data on comorbidities too limited to draw meaningful conclusions

Source: *Comorbidities in Workers Compensation*, NCCI Research Brief, Laws, C. and Colon, D. (2012)

Change in Claims with Comorbidities Pre-ACA to Post-ACA



Summary of Preliminary Findings

- No change in access to care after ACA implementation
- No indication of increased pricing for physician services
- No indication of ACA impact on claim frequency
- Some indication of potential ACA impacts on soft tissue injuries
- Limited data on comorbidities led to limited inferences

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