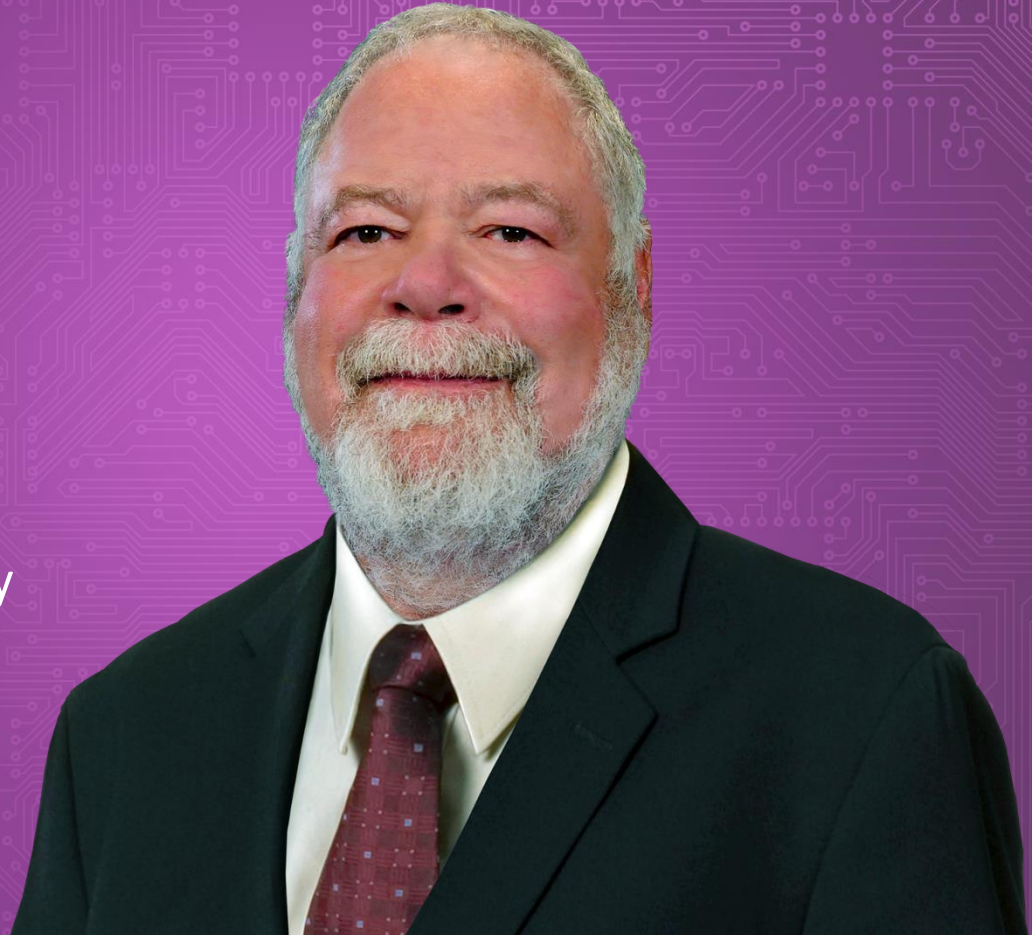


Work Comp vs. Group Health— The Price We Pay

Barry Lipton, FCAS, MAAA
Practice Leader and Senior Actuary
NCCI



Medical Costs Covered by Workers Compensation and Group Health

Workers compensation (WC) covers lifetime medical costs associated with a work-related injury

Group health (GH) covers a broad array of healthcare services and products for an employee and their covered family members during the policy term

Regulation of WC and GH

WC

Primarily Regulated
at State Level

Statutes and Regulations Determine

- Compensability
- Fee Schedules
- Provider Choice

GH

Regulated at State
and Federal Levels

ACA

COBRA

ERISA

HIPAA

Medical Cost Controls

Some Commonalities

Provider Networks

Drug Formularies

Prior Authorization/
Utilization Review

Some Differences

Fee Schedules

Patient Shares the Costs

Safety Programs

Wellness Programs

Focus on Return to Work

WC

GH

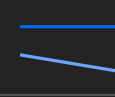


WC Costs More Than GH To Treat Similar Injuries

Physician Services from Service Years 2013 to 2016



Volume of services drives cost differences while prices paid are comparable



WC costs for radiology improved while physical medicine remained high



Smaller cost differences for acute injuries than for complex injuries

Injuries Included in Analysis of Physician Services



Acute

Ankle fracture or sprain

Humerus/shoulder fracture, dislocation, or sprain

Wrist/hand fracture, dislocation, or sprain

Knee ligament injury

Lower extremity open wound or blunt trauma

Upper extremity open wound or blunt trauma



Complex

Inguinal hernia

Lower back disc disorders

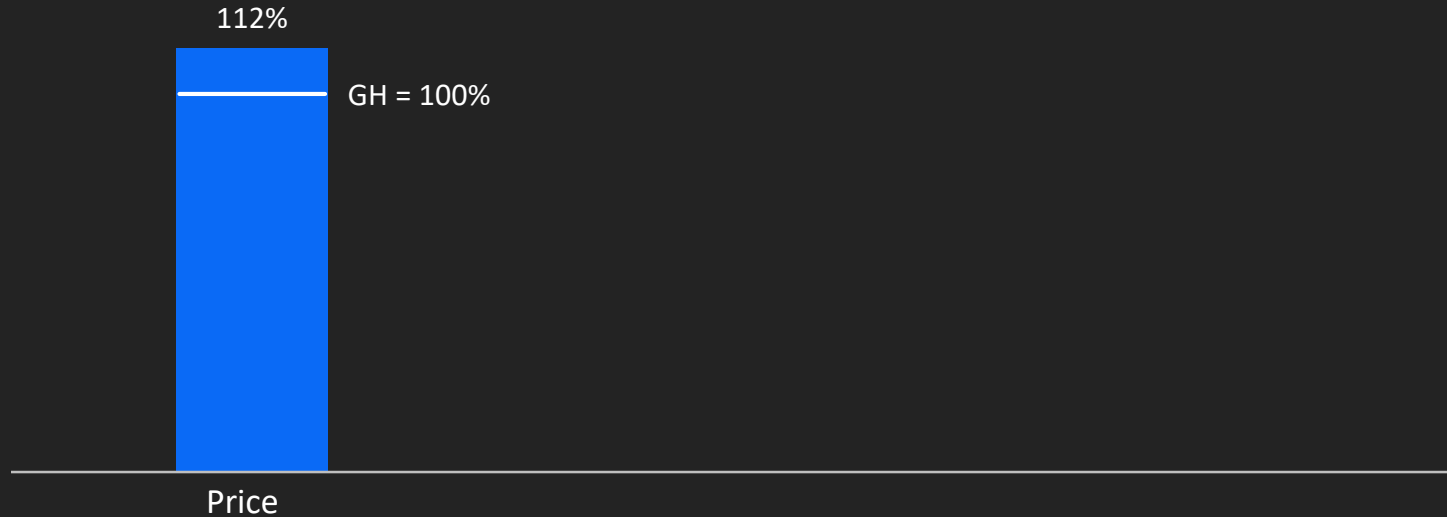
Other bone and joint disorders

Bursitis

Other lower back disorders incl. spine

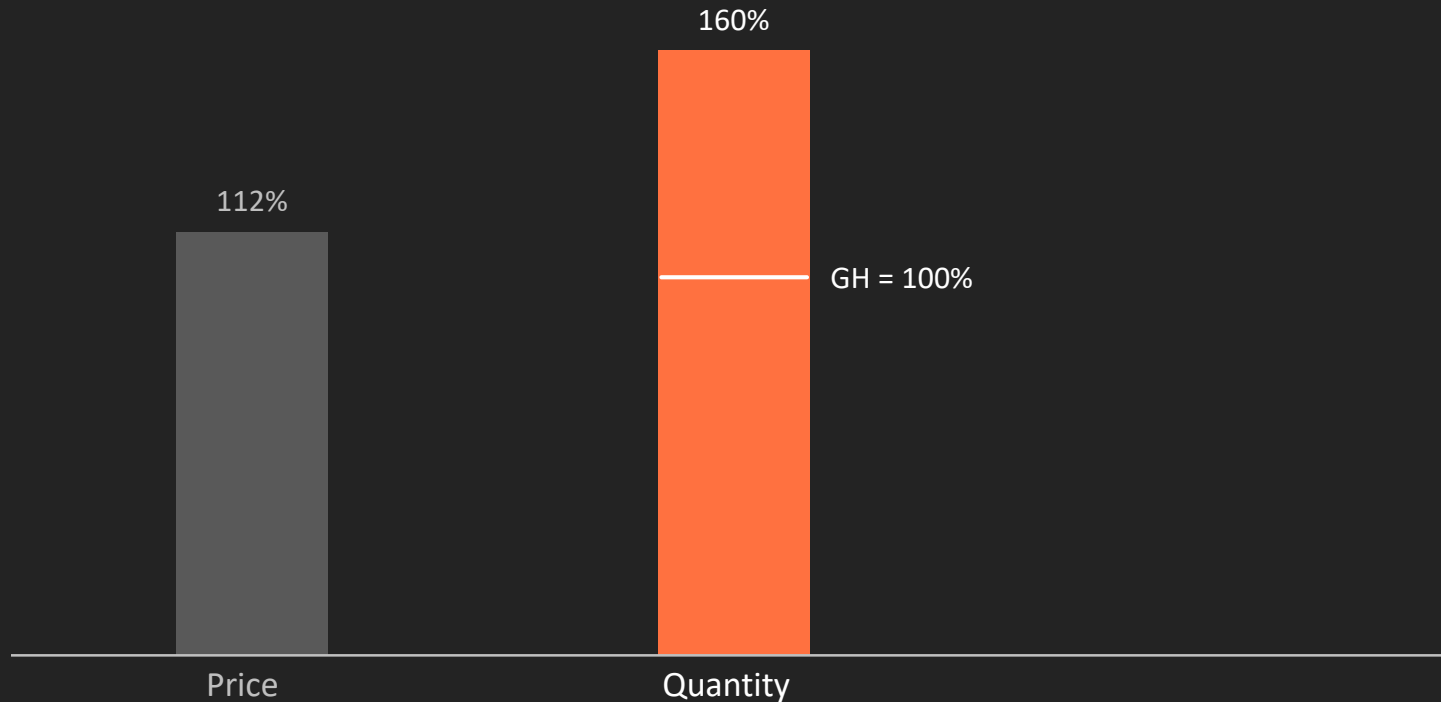
Upper back spine/spinal cord injury

Prices for Physician Services Are Marginally Higher in WC Than in GH



Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services and 12 injuries
States included: AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MO, MS, MT, NC, NE, NH, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, and WV
Price differential is difference between average prices per service for comparable injuries; analysis includes lost-time and medical-only claims

Volume of Physician Services Is Significantly Higher in WC Than in GH



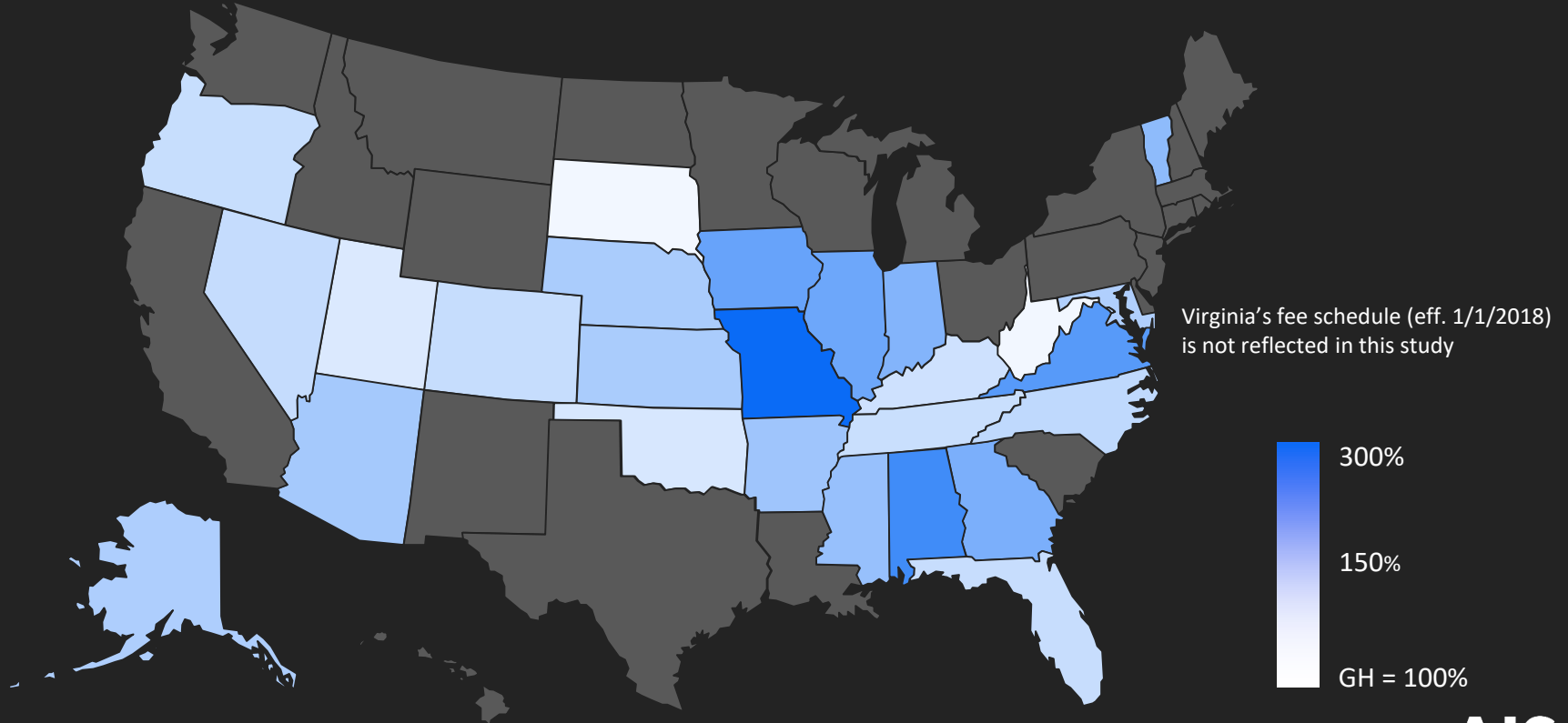
Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services and 12 injuries
States included: AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MO, MS, MT, NC, NE, NH, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, and WV
Quantity differential is difference between number of services provided for comparable injuries; analysis includes lost-time and medical-only claims

Costs for Physician Services Are 77% Higher in WC Than in GH



Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services and 12 injuries
States included: AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MO, MS, MT, NC, NE, NH, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, and WV
Analysis includes lost-time and medical-only claims

WC to GH Cost Differentials

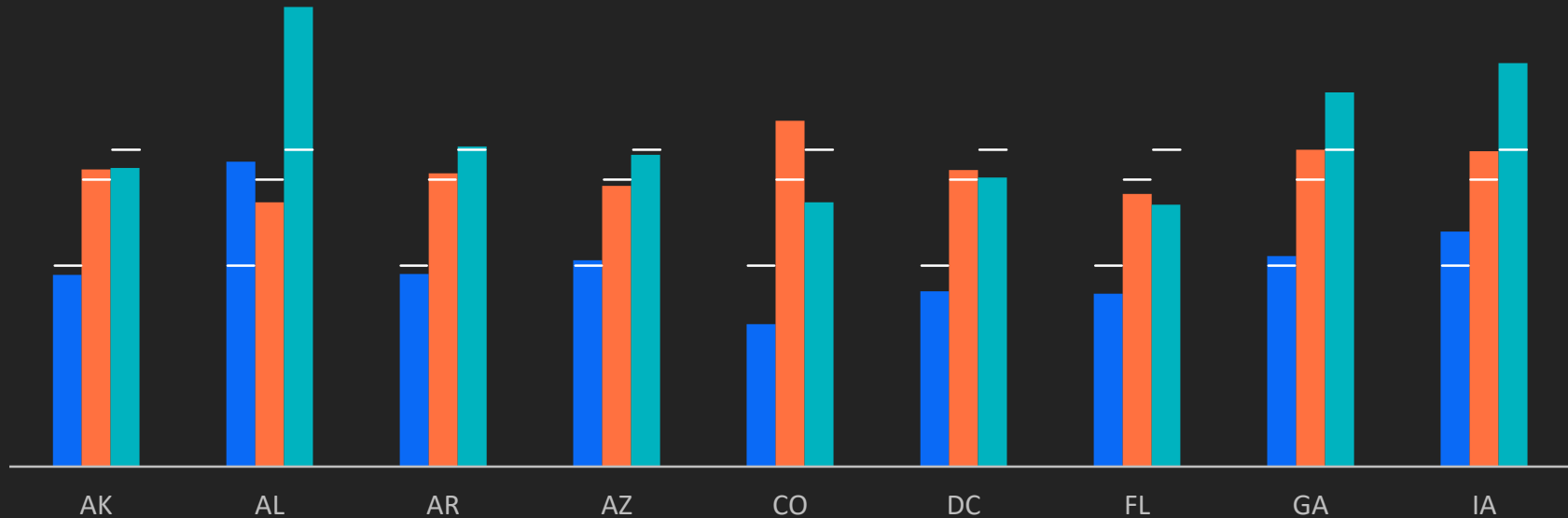


Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services and 12 injuries
States shown: AK, AL, AR, AZ, CO, DC, FL, GA, IA, IL, IN, KS, KY, MD, MO, MS, NC, NE, NV, OK, OR, SD, TN, UT, VA, VT, and WV
Analysis includes lost-time and medical-only claims

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Physician Services

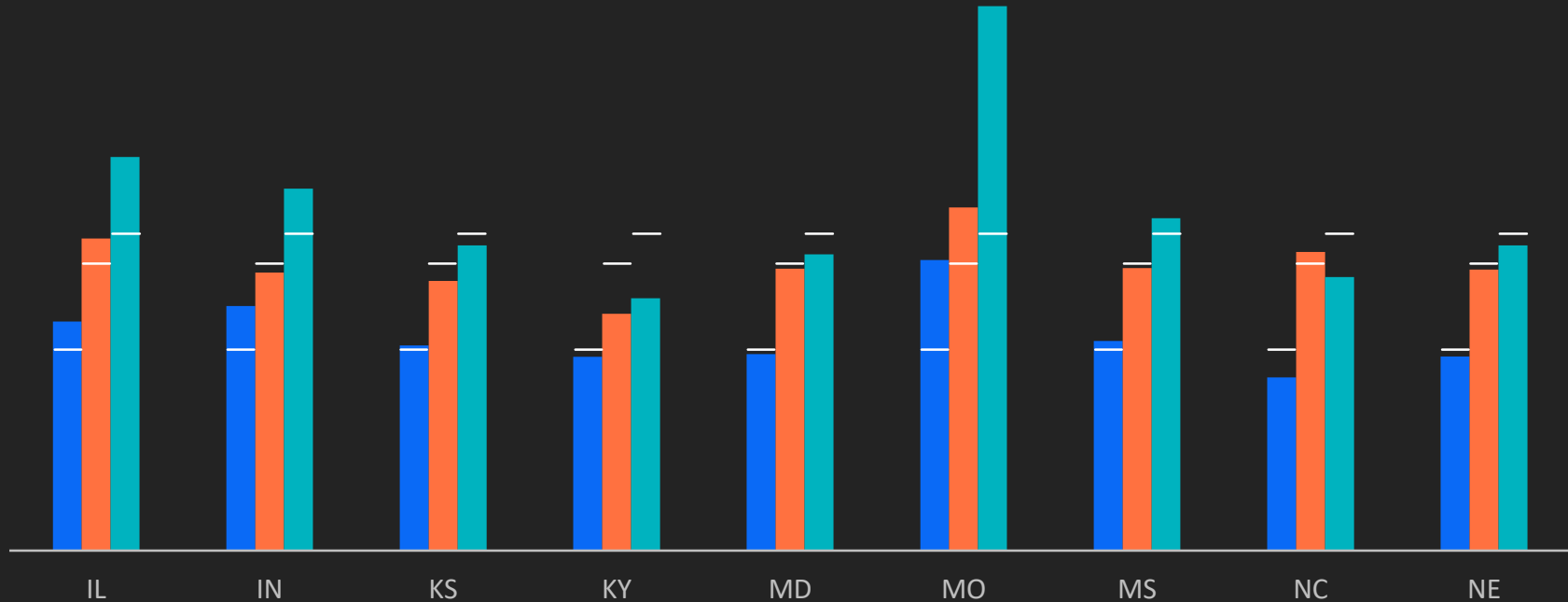
WC to GH Differentials by Price, Quantity, and Cost Relative to National Values



Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services and 12 injuries
Analysis includes lost-time and medical-only claims
White lines represent national WC to GH relativities

Physician Services

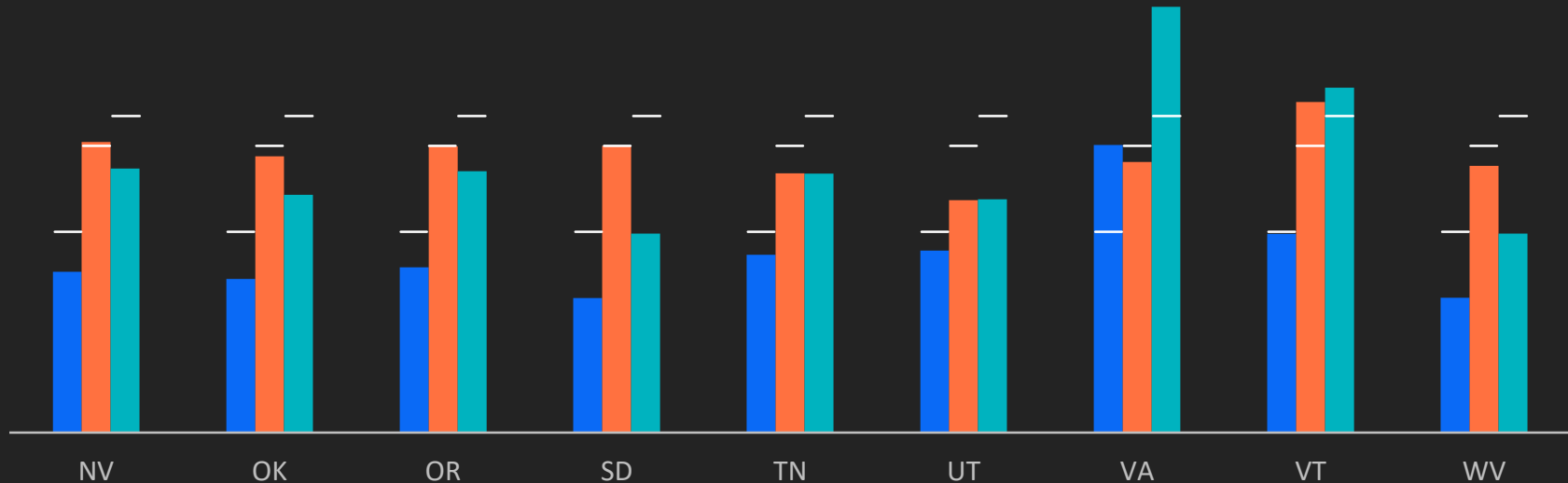
WC to GH Differentials by Price, Quantity, and Cost Relative to National Values



Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services and 12 injuries
Analysis includes lost-time and medical-only claims
White lines represent national WC to GH relativities

Physician Services

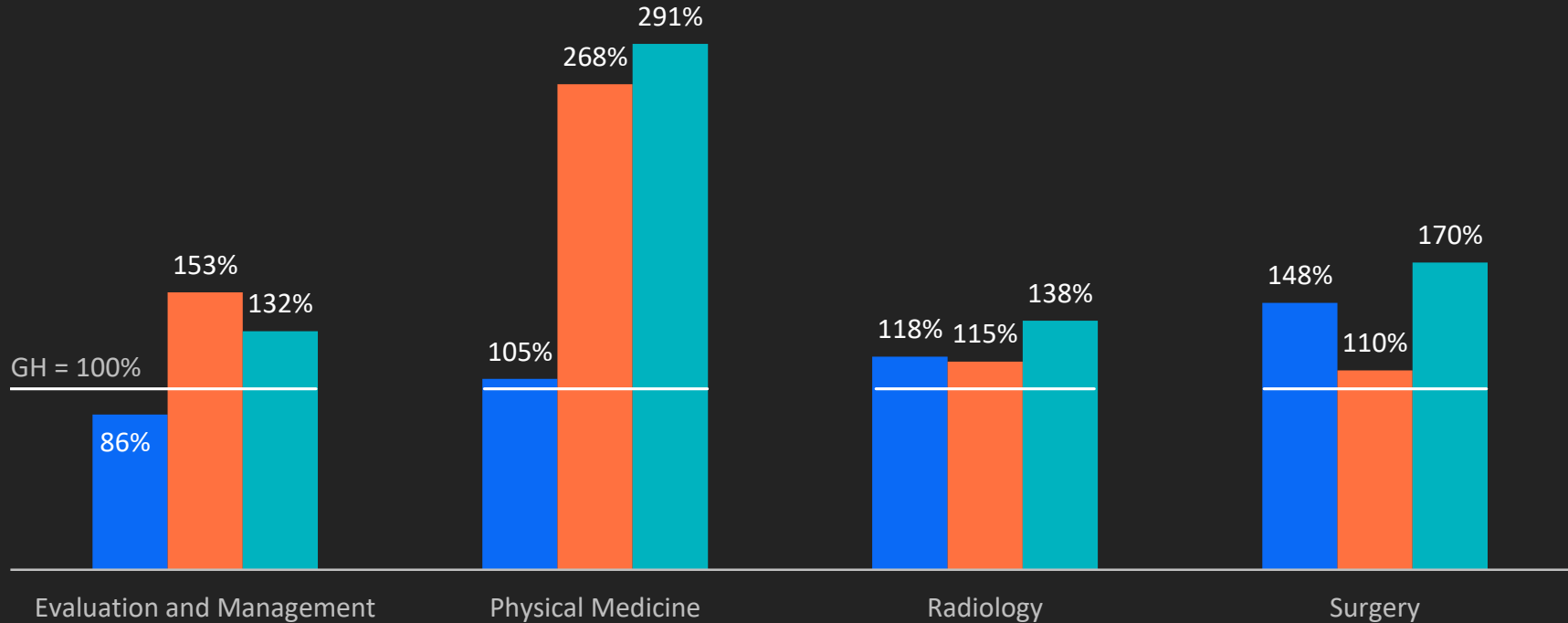
WC to GH Differentials by Price, Quantity, and Cost Relative to National Values



Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services and 12 injuries
Analysis includes lost-time and medical-only claims
Virginia's fee schedule (eff. 1/1/2018) is not reflected in this study
White lines represent national WC to GH relativities

Cost Differentials Vary by Service Category

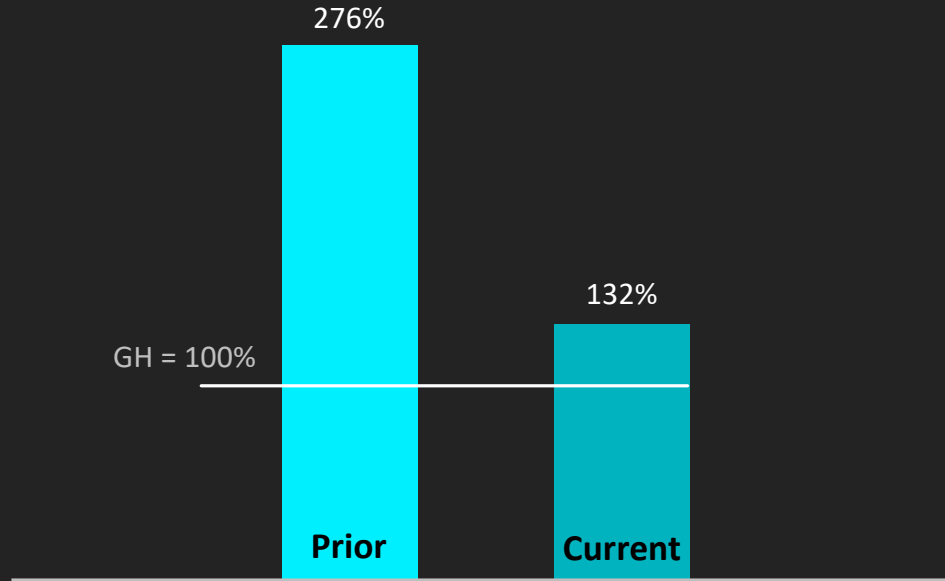
WC to GH Price, Quantity, and Cost Differentials for Physician Services



Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services and 12 injuries
States included: AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MO, MS, MT, NC, NE, NH, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, and WV
Analysis includes lost-time and medical-only claims

WC Radiology **Costs** Have Improved Dramatically Since Early 2000s

90 Days Post-Injury

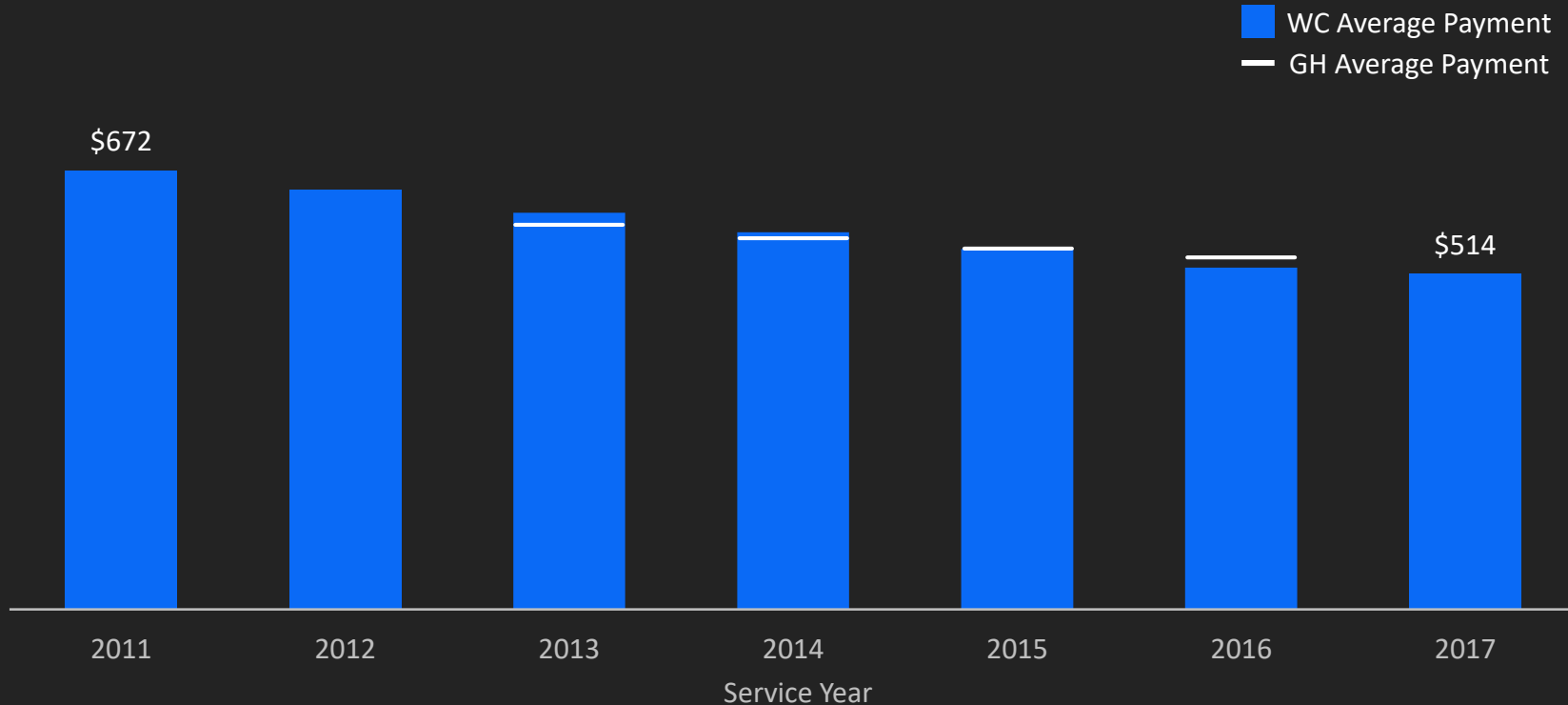


Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services and 12 injuries
States included: AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MO, MS, MT, NC, NE, NH, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, and WV
Analysis includes lost-time and medical-only claims

Prior: John Robertson, Dan Corro, *Workers Compensation vs. Group Health: A Comparison of Utilization*, NCCI, November 2006

WC and GH Payments for MRIs Are Similar

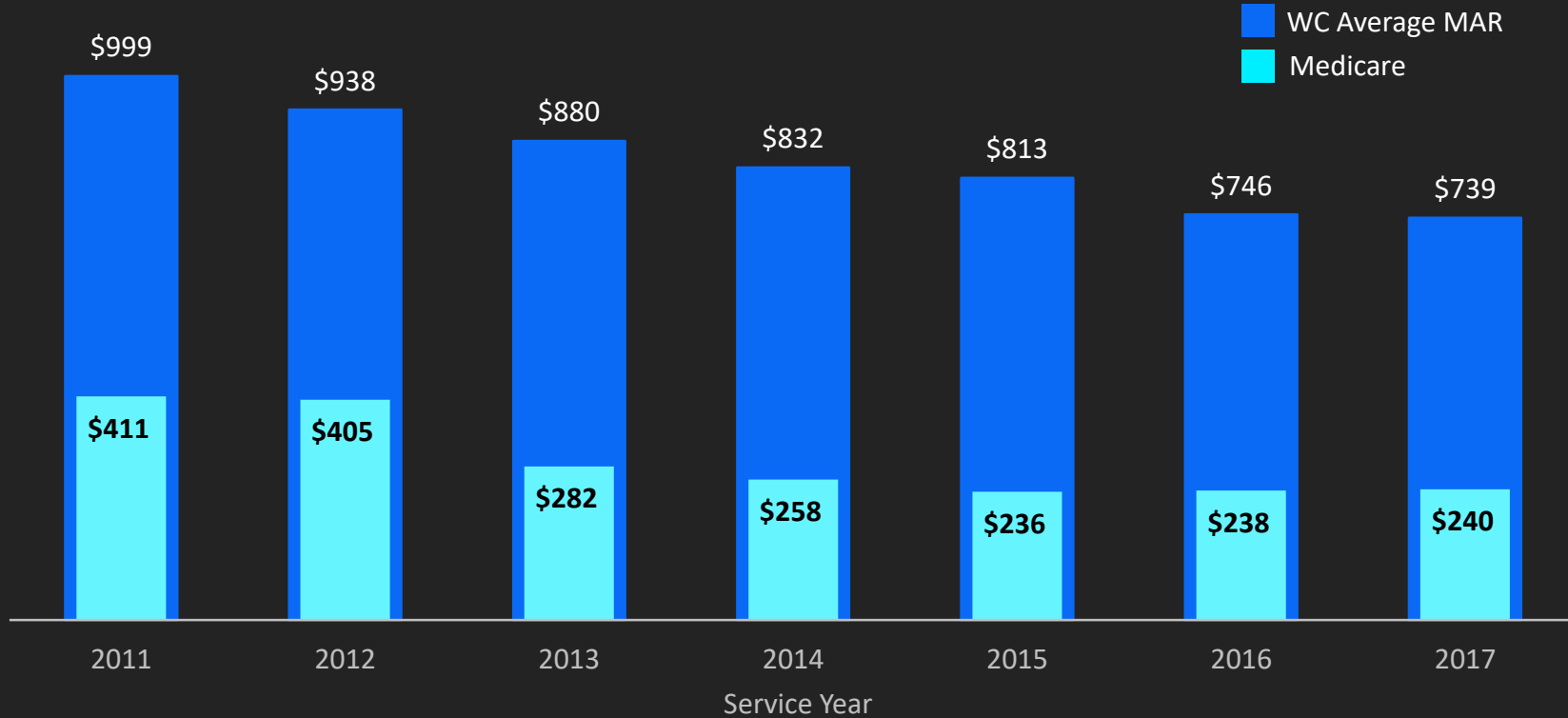
MRI of Any Joint of Lower Extremities Without Dye



Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services
Includes states with Physician Fee Schedule: AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, ID, IL, KS, KY, LA, MD, ME, MS, MT, NC, NE, NM, NV, OK, OR, RI, SC, SD, TN, UT, VT, and WV
Analysis includes lost-time and medical-only claims
MRI is the abbreviation for Magnetic Resonance Imaging

MRI Maximum Allowable Reimbursement (MAR)

MRI of Any Joint of Lower Extremities Without Dye



Source: NCCI's Medical Data Call and Physician Fee Schedule Relative Value Files published by Centers for Medicare & Medicaid Services

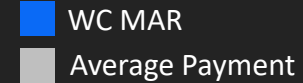
Includes states with Physician Fee Schedule: AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, ID, IL, KS, KY, LA, MD, ME, MS, MT, NC, NE, NM, NV, OK, OR, RI, SC, SD, TN, UT, VT, and WV

National WC Maximum Allowable Reimbursement (MAR) is a weighted average of state MARs; analysis includes lost-time and medical-only claims

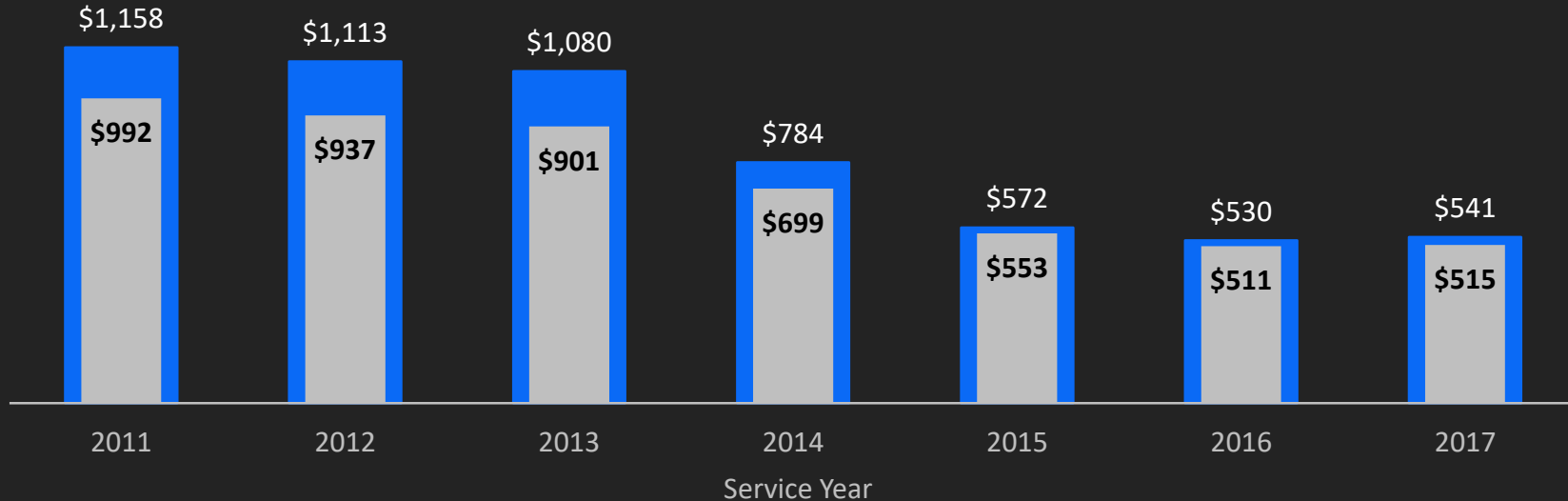
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MRI MARs Have Declined Significantly in Medicare-Based Fee Schedules

MRI of Any Joint of Lower Extremities Without Dye



State With Medicare-Based Fee Schedule

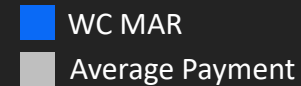


Source: NCCI's Medical Data Call and Optum360 Fee Schedule Data; WC MAR is a weighted average of MARs in effect during the service year

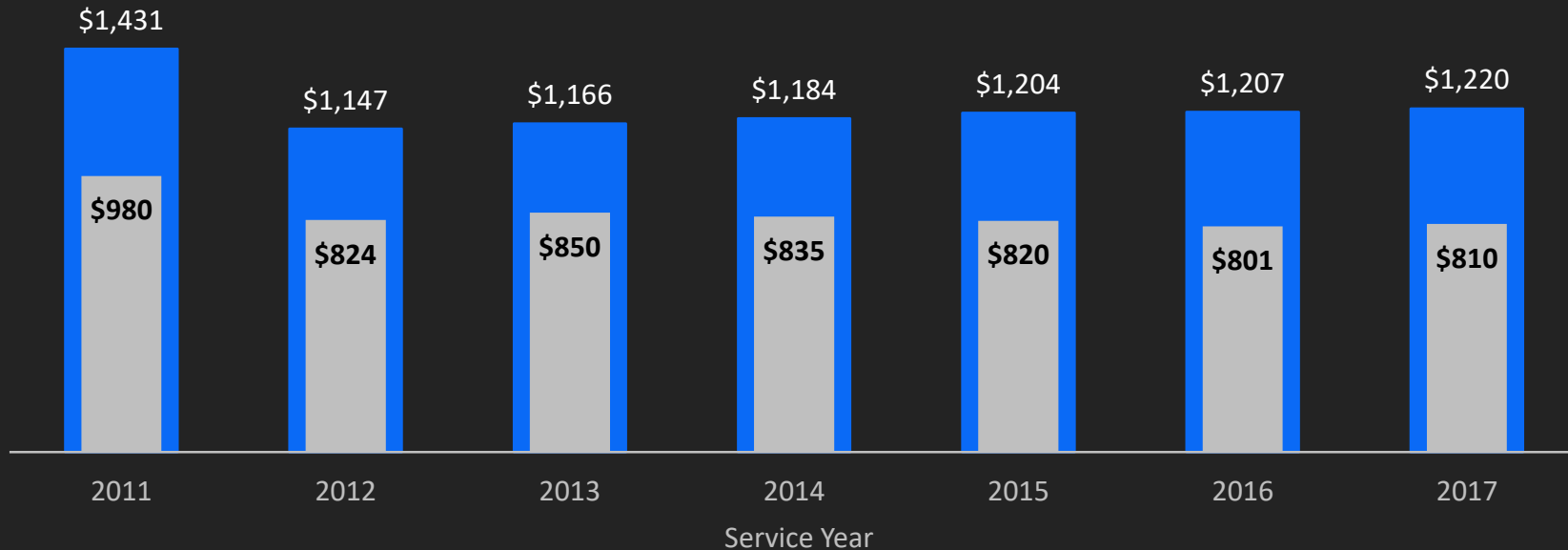
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In Some States, MRI MARs Have Not Declined

MRI of Any Joint of Lower Extremities Without Dye



State With Fee Schedule Not Medicare-Based

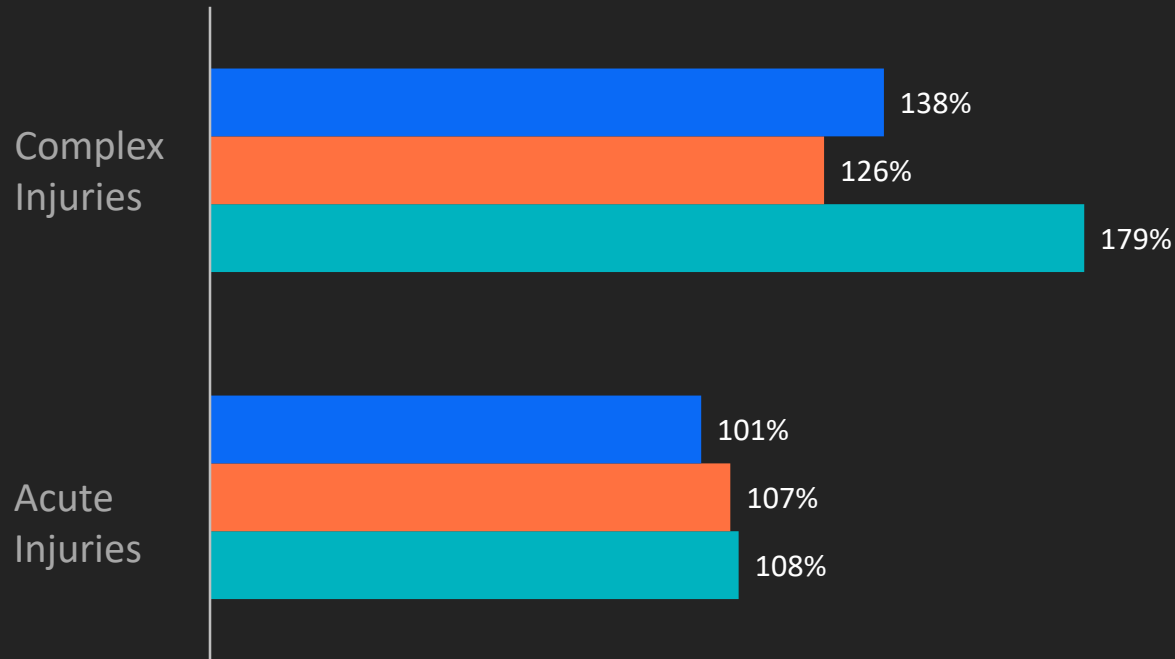


Source: NCCI's Medical Data Call and Optum360 Fee Schedule Data; WC MAR is a weighted average of MARs in effect during the service year

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WC Radiology Costs More Than GH for Complex Injuries

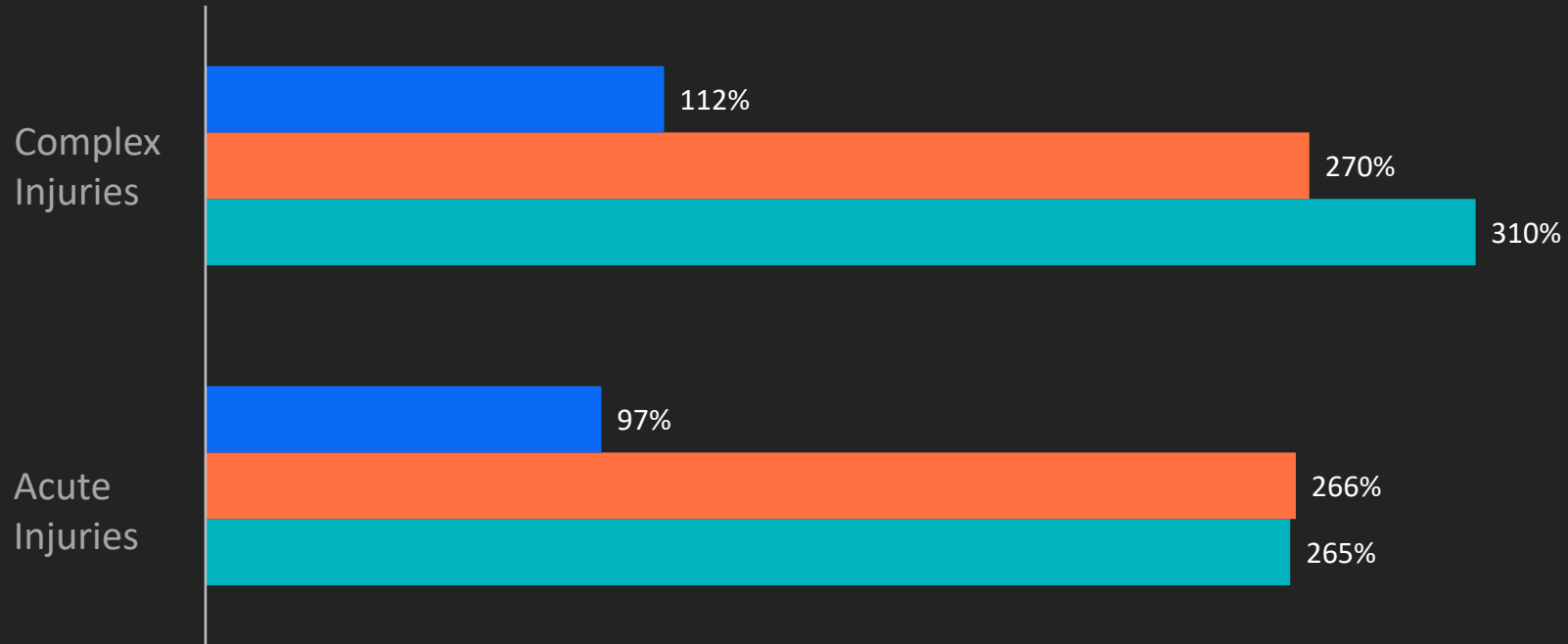
WC to GH Price, Quantity, and Cost Differentials



Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services
States included: AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MO, MS, MT, NC, NE, NH, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, and WV
Analysis includes lost-time and medical-only claims

WC Physical Therapy Volume Is Higher Than GH

WC to GH Price, Quantity, and Cost Differentials



Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services
States included: AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MO, MS, MT, NC, NE, NH, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, and WV
Analysis includes lost-time and medical-only claims

WC Patients Get More Physical Therapy Than GH

- Among the 12 injuries, WC patients are 45% more likely to receive physical therapy
- Among patients receiving physical therapy, WC patients receive
 - 50% more visits
 - 20% more modalities per visit
 - And cost 37% more per visit

Source: NCCI's Medical Data Call and Truven Health MarketScan® Commercial Claims and Encounters database for Service Years 2013–2016 for physician services
States included: AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MO, MS, MT, NC, NE, NH, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, and WV
Analysis includes lost-time and medical-only claims



Experience Rating Plan

NCCI Experience Rating Modification

Mod uses an insured's three-year claim history from the **Experience Period** to predict its loss cost in the **Rating Period**

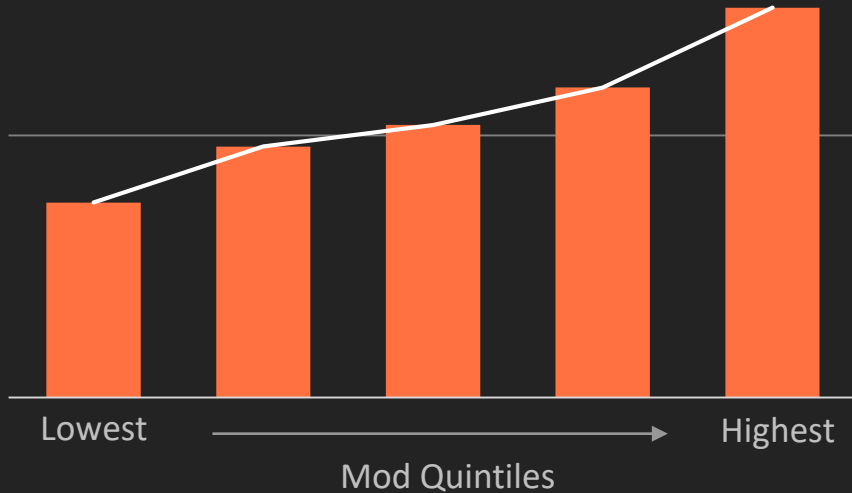


Experience period has three years in general

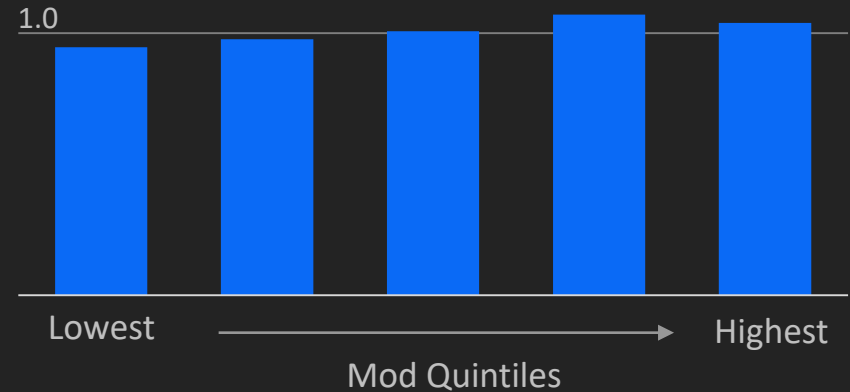
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Current Mod Performs Well

Steep slope in **loss ratios before applying Mod** shows predictive power



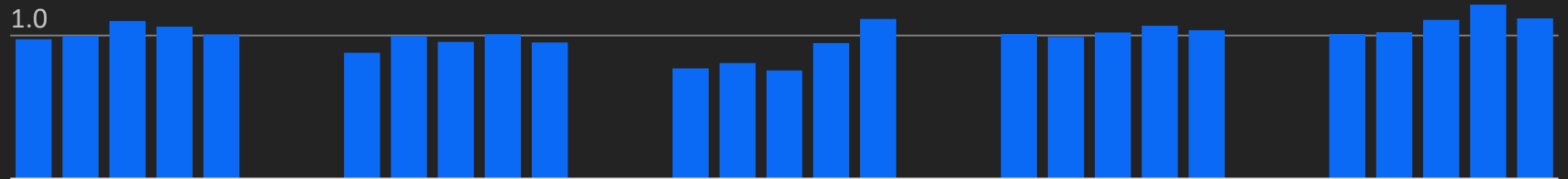
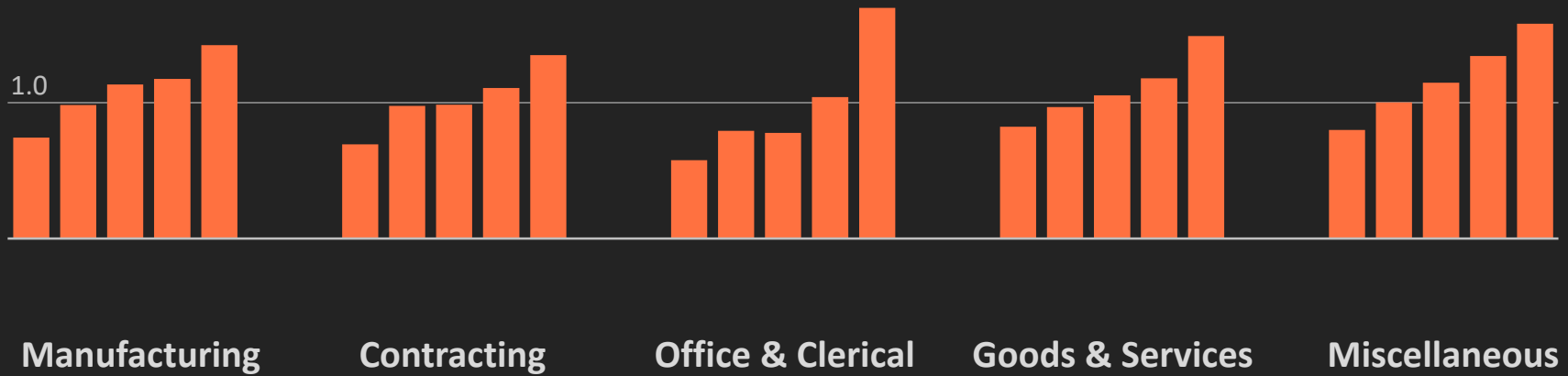
Small deviations from 1.0 in **loss ratios after applying Mod** shows accuracy



Rating Year 2014; all states combined; approximately 20% of insureds in each Mod group (quintiles by insured count)
Total loss ratios are balanced to 1.0 both before and after applying Mod

Mod Performance Varies by Industry Group

Loss Ratios **Before** and **After** Applying Mod by Quintiles



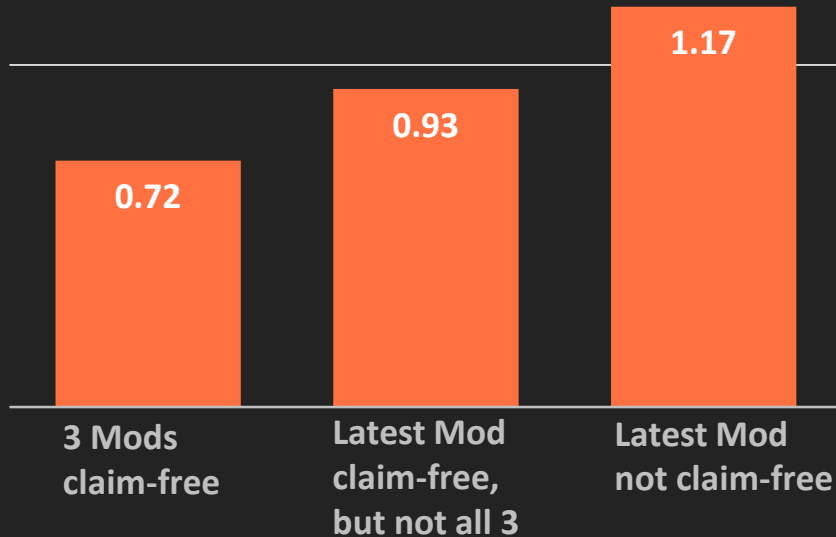
Rating Year 2014; all states combined; quintiles by insured count

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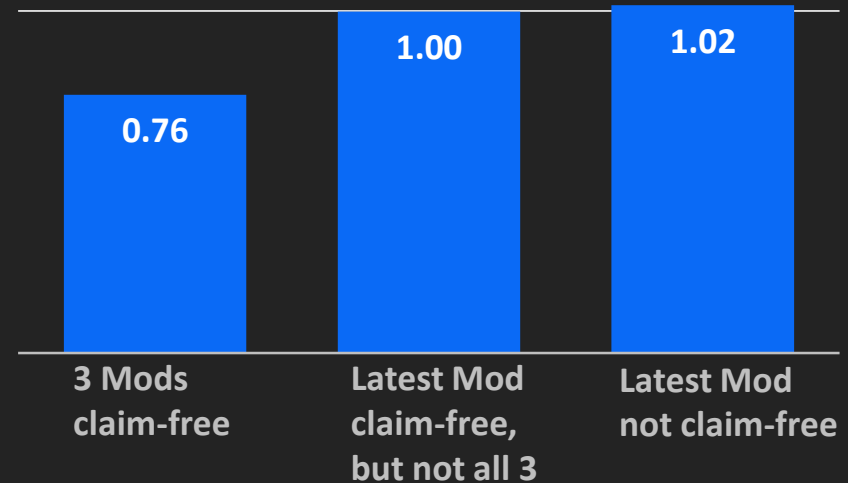
Longer Claim History Brings More Predictive Power

Risks With Experience Period Expected Losses Between \$10,000 and \$40,000

Loss Ratio **Before** Applying Mod

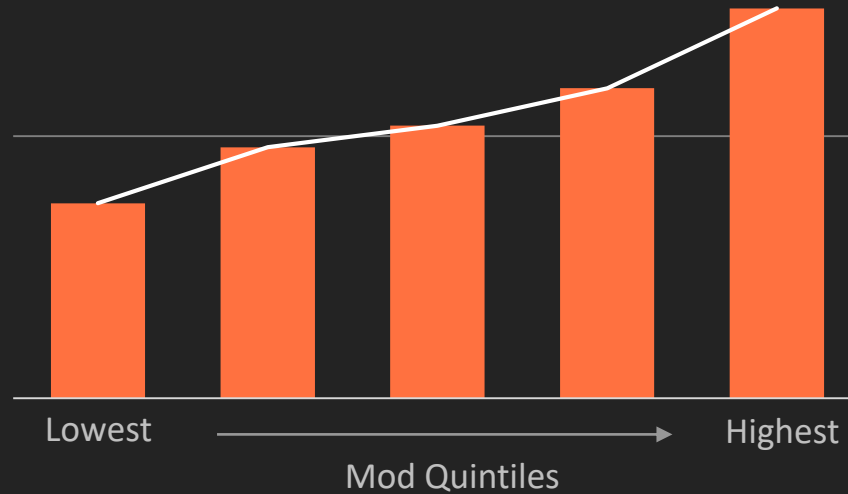


Loss Ratio **After** Applying Mod



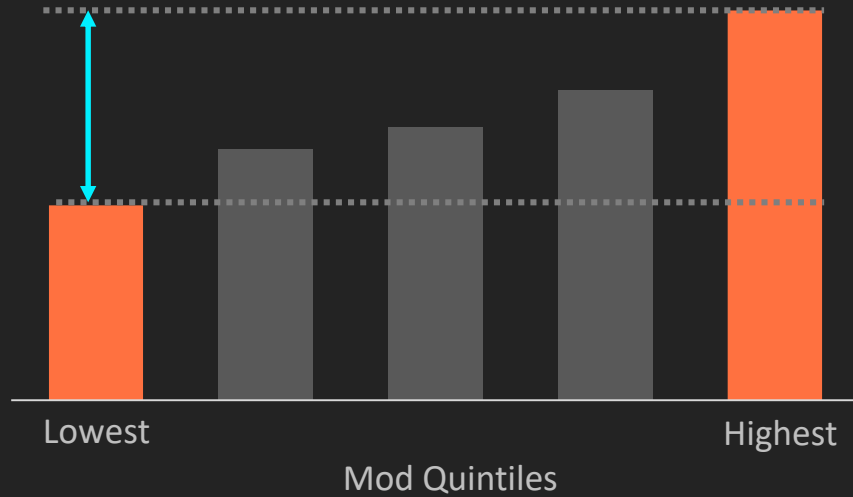
Rating Year 2015; insureds with three Mods, i.e., Rating Year 2015, 2014, and 2013 Mods
Claim-free status is based on experience period total claim counts; all states combined

Steep Slope in Loss Ratios Before Applying Mod Shows Predictive Power



Rating Year 2014; all states combined; approximately 20% of insureds in each Mod group (quintiles by insured count)
Total loss ratios are balanced to 1.0 both before and after applying Mod

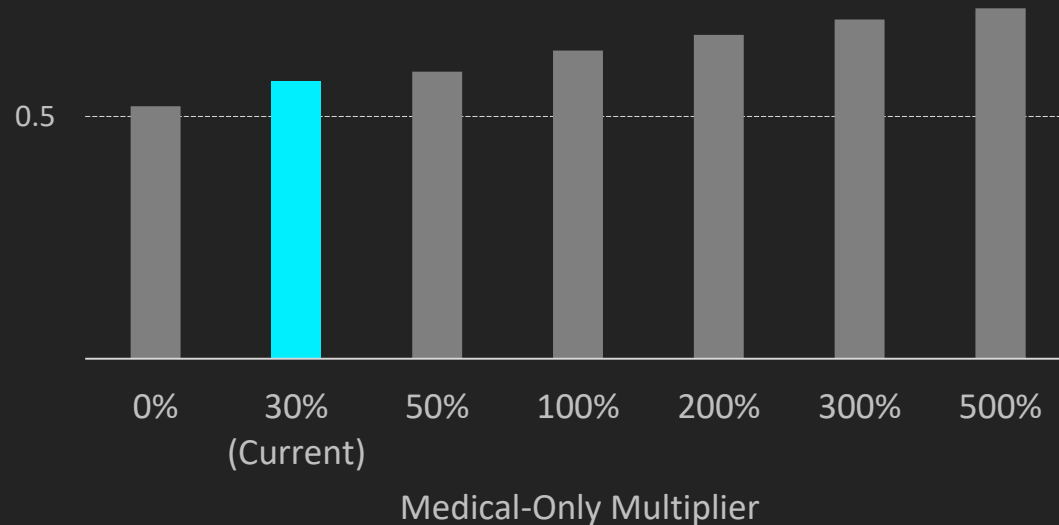
Measuring Predictive Power



Rating Year 2014; all states combined; approximately 20% of insureds in each Mod group (quintiles by insured count)
Total loss ratios are balanced to 1.0 both before and after applying Mod

Scaling Up Medical-Only Claim Amounts Increases Predictive Power

Risks with Experience Period Expected Losses Between \$10,000 and \$40,000



Predictive power:

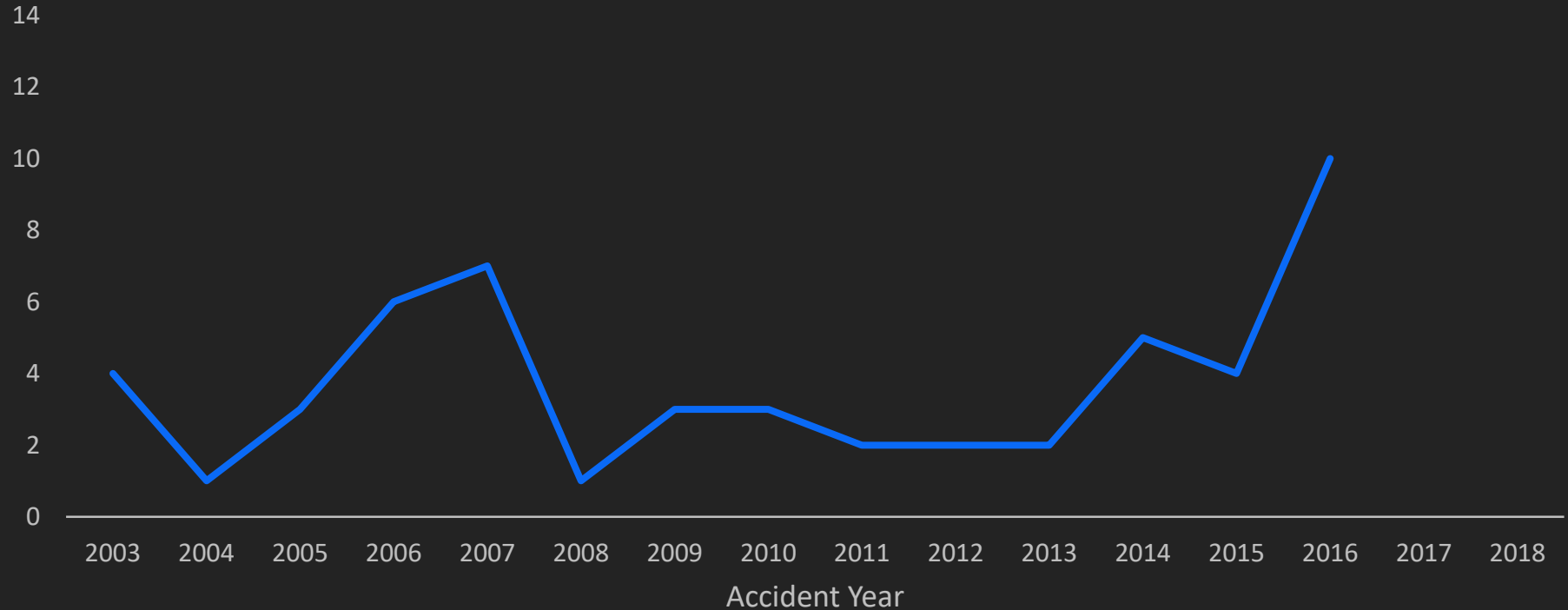
Loss ratio difference—prior to Mod— between highest and lowest quintiles



Mega Claims

AY 2016 Had an Uptick in Mega Claims at 24 Months

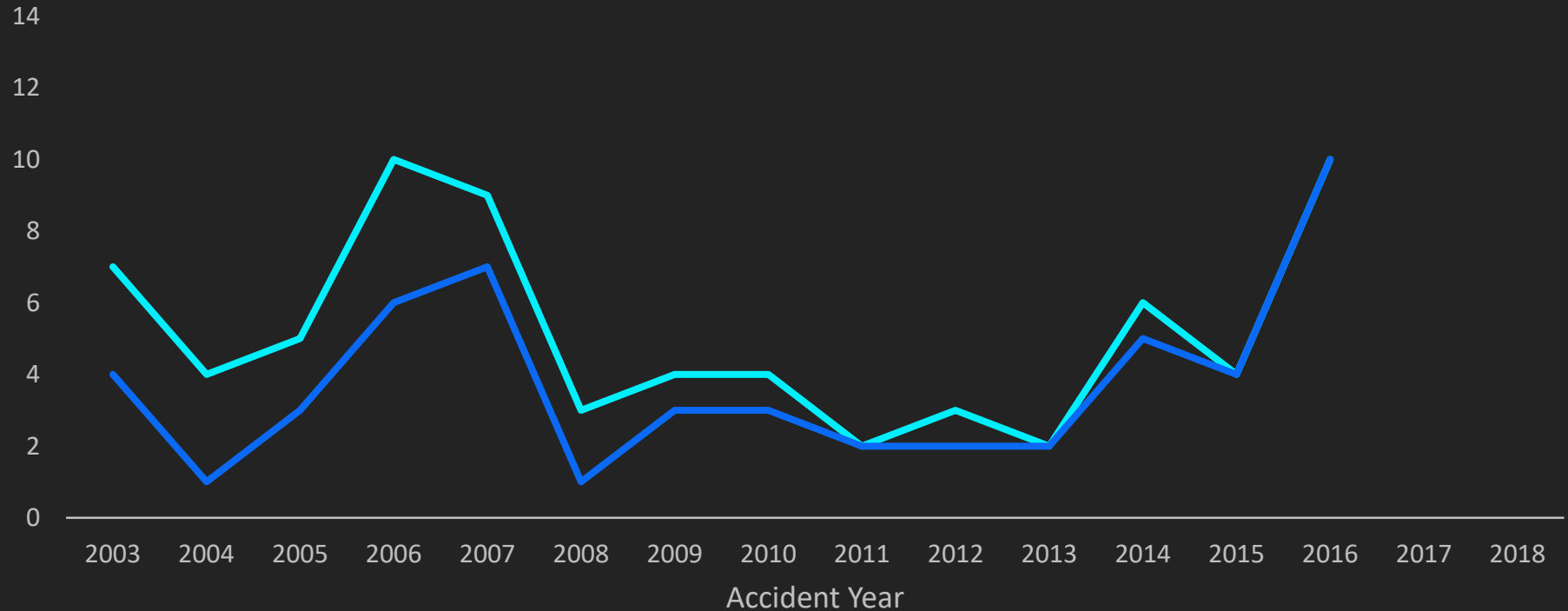
Number of Claims: At Least \$10M, **Not Inflation-Adjusted**



Source: NCCI's Financial Call 31 data for 36 states—states where NCCI provides ratemaking services, excluding TX and WV
Claims on large-deductible policies are excluded
AY is the abbreviation for Accident Year

AY 2016 Had an Uptick in Mega Claims at 24 Months

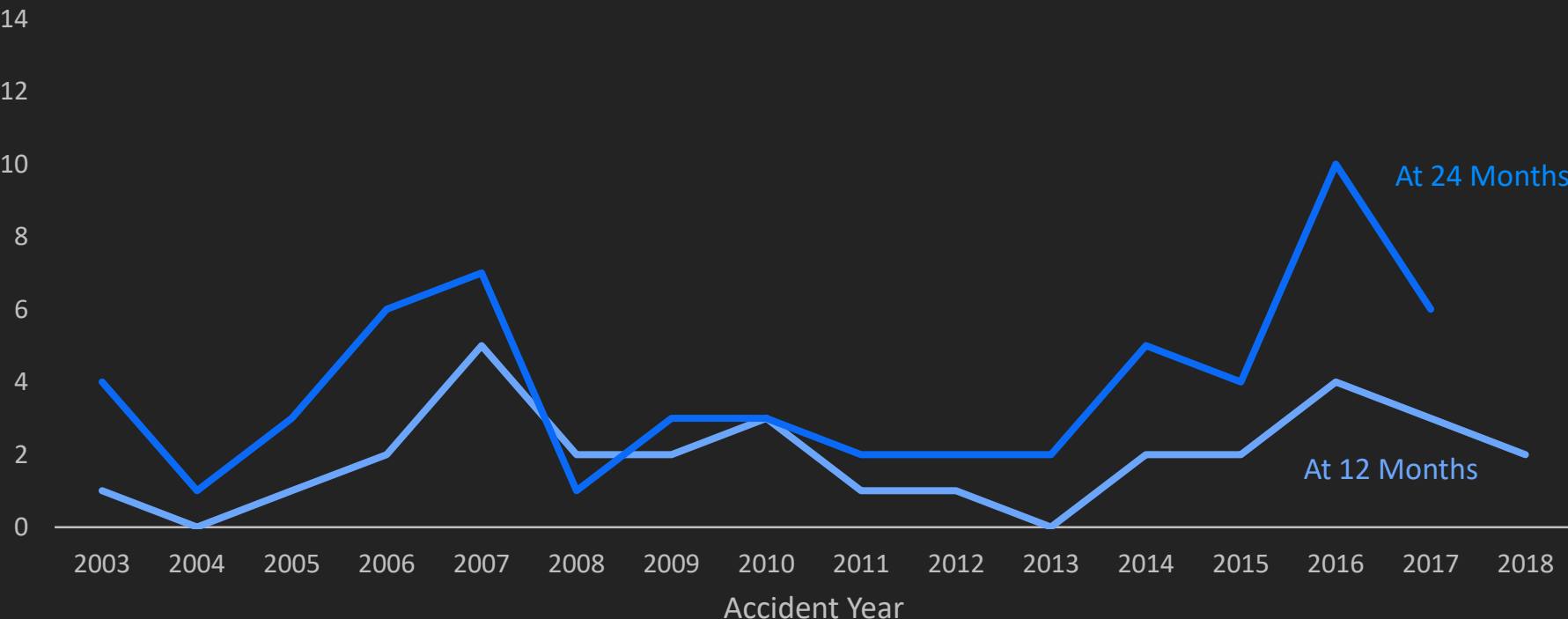
Number of Claims: At Least \$10M, **Not Inflation-Adjusted** vs. **Inflation-Adjusted**



Source: NCCI's Financial Call 31 data for 36 states—states where NCCI provides ratemaking services, excluding TX and WV
Claims on large-deductible policies are excluded
Inflation adjusted values use Quarterly Census of Employment and Average Weekly Wage for indemnity, and Personal Health Care index for medical

Recent Years Have Fewer Mega Claims Than AY 2016

Number of Claims: At Least \$10M, Not Inflation-Adjusted



Source: NCCI's Financial Call 31 data for 36 states—states where NCCI provides ratemaking services, excluding TX and WV
Claims on large-deductible policies are excluded

