



Frequency and Severity Results by State

Based on Data Valued as of December 31, 2016



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EXECUTIVE SUMMARY

This is NCCI's annual update of frequency and severity results based on data reported to NCCI on the Calendar-Accident Year Financial Data Call. The results are provided by individual jurisdiction, based on data valued as of Year-End 2016. The countrywide results are for all jurisdictions where NCCI provides ratemaking services.

Several key observations from the results include:

- Between 2015 and 2016:
 - Lost-time claim frequency decreased in 36 of the 38 jurisdictions.
 - Indemnity claim severity increased in 28 of the 38 jurisdictions, with the majority of those changes between 0 and +10%.
 - Medical lost-time claim severity increased in 29 of the 38 jurisdictions. Similar to prior years, the changes varied considerably by jurisdiction, with 6 states showing changes greater than 15%.
- For the average changes between 2012 and 2016:
 - Almost all jurisdictions show an average decrease in lost-time frequency
 - In general, both indemnity and medical severity have increased over the last five years

The state-specific information underlying these key takeaways is included in this report. Please see the accompanying Frequency and Severity Results by State spreadsheet for additional information. This report was prepared as of February 20, 2018. Therefore, events that occurred after this date that may have a material impact on workers compensation costs in NCCI jurisdictions have not been considered in the analysis.



COMPARISON TO TREND FACTORS USED IN RATEMAKING

In the accompanying spreadsheet, frequency and severity results by calendar-accident year are provided separately by jurisdiction. The severities are determined based on both the paid and paid plus case loss development methodologies.

Frequency and Severity Results

For this study, the severities by individual jurisdiction reflect historical levels of benefits and wages and, therefore, represent actual historical dollar values. In addition, we have removed medical-only claim dollars from medical losses to isolate medical costs for lost-time claims.

Frequency and Severity in Ratemaking

Similar to the results provided in this report, frequency and severity analyses are also performed as part of each jurisdiction's rate filing process, with some important distinctions. In the ratemaking process, our goal is to forecast future changes in frequency and severity. We are interested in the residual trends in frequency and severity after removing the impact of historical benefit changes.

In addition, we adjust the claim severities for wage inflation. This allows us to analyze the changes in severity from year to year in excess of wage inflation. As our goal in ratemaking is to analyze changes in lost-time claim severity, medical-only losses are not removed from total medical losses because their inclusion has little impact on year-to-year changes in medical average lost-time claim costs.

The following table summarizes the primary differences in methodology between this frequency and severity report and the state-specific analyses performed as part of the rate filing review process.



Frequency and Severity Results by State

Calendar-accident year data is used

Losses are unlimited

Losses and claim counts are developed to an ultimate report

Paid and paid plus case loss development methodologies are used

Losses are at historical benefit levels

Severities are not adjusted for wage inflation

Medical-only claim dollars are removed from the medical losses

Exposure base is pure premium

Rate Filing Trend Analyses

Policy year data is typically used

Individual losses are limited in most jurisdictions

Losses and claim counts are developed to an ultimate report

Loss development is consistent with the methodology used in the loss cost/rate filing

Losses are adjusted to current benefit level

Severities are adjusted for wage inflation; therefore, the resulting changes in severity are in excess of changes in wage growth

Medical-only claim dollars are not removed from the medical losses in the analysis of changes in medical lost-time severity

Exposure base is pure premium

METHOD OF CALCULATION

The following calculations are applied to Calendar-Accident Year Financial Call data by individual jurisdiction.

Frequency

- Indemnity (lost-time) claim counts are developed to an ultimate report
- Calendar year premium is adjusted to the current loss cost/rate level
- Expense-related premium, including expense constant premium, is excluded to adjust the current-level premium to a pure premium basis
- The pure premium is brought to the current wage level by multiplying by the ratio of current-to-historical average weekly wages
- Frequency is the result of dividing the ultimate claim counts by the wage-adjusted, on-leveled pure premium in millions of dollars



Severity

- Paid and paid plus case losses are developed to an ultimate report
- Indemnity (lost-time) claim counts are developed to an ultimate report
- **Statistical Plan** data by jurisdiction is used to estimate the percentage of ultimate medical losses resulting from medical-only claims
- This estimated **Statistical Plan** medical-only percentage is then used to remove medical-only loss amounts from the ultimate medical losses
- Severity is the result of dividing each of the four ultimate loss totals (paid and paid plus case losses separately for the indemnity and medical components) by the ultimate claim count

Countrywide results are determined by summing the data from each individual NCCI jurisdiction. Each jurisdiction's premium, claim counts, and losses are developed using a methodology consistent with the approach used in the most recent rate review.



CAVEATS

From one accident year to another, results at a state level may be volatile due to:

- Small volume of data
- Actual versus estimated loss development
- Changes in reserve adequacy
- Closure of claims without indemnity payment (reducing claim counts)

For large losses that have a significant impact on the state results, the reported paid plus case amount is used as the best estimate of the claim's ultimate value. Claims of this magnitude are not frequent, and this adjustment is only made for the valuation in which the predetermined impact threshold is reached.

While reviewing the state-specific results included in this report, there are some limitations to be aware of, which may include the following:

- The mix of carriers that are included in the experience may change from one data valuation to the next, which may lead to varying results over time
- These results neither indicate nor apply to any type of rate adequacy analysis
- These results are the product of a mechanical process and do not reflect the results of a state-specific actuarial review



LOSS DEVELOPMENT METHODOLOGY BY JURISDICTION

<u>Jurisdiction</u>	<u>Paid to a 19th Report</u>	<u>Paid Plus Case to a 19th Report</u>	<u>Average of Paid and Paid Plus Case to a 19th Report</u>
Alabama			X
Alaska			X
Arizona	X		
Arkansas		X	
Colorado		X	
Connecticut			X
District of Columbia		X	
Florida			X
Georgia			X
Hawaii			X
Idaho	X		
Illinois			X
Indiana			X
Iowa			X
Kansas			X
Kentucky			X
Louisiana	X		
Maine	X		
Maryland			X
Mississippi			X
Missouri			X
Montana	X		
Nebraska			X
Nevada	X (to a 13th report)		
New Hampshire			X
New Mexico			X
North Carolina			X
Oklahoma			X
Oregon	X		
Rhode Island	X		
South Carolina			X
South Dakota			X
Tennessee			X
Texas			X (to a 14th report)
Utah	X		
Vermont			X
Virginia		X	
West Virginia			X (to a 10th report)



Development factors are based on a subset or combination of data valued as of Year-End 2010 through Year-End 2016. To be as consistent as possible with NCCI's filing process, each jurisdiction's losses are developed using a methodology consistent with the approach used in that jurisdiction's most recent rate review.

Methodology Key

For the purposes of this document, the development methodology refers to the basis of losses, which are then developed to ultimate.

Paid to a 19th Report

Paid losses are used as the experience base from 1st through 19th report. The paid losses are then developed to an ultimate report via a selected tail factor.

Paid Plus Case to a 19th Report

The sum of paid losses and case reserves is used as the experience base from 1st through 19th report. The sum of paid losses and case reserves is then developed to an ultimate report via a selected tail factor.

Please note that some jurisdictions use variations of the development methodologies described above (e.g., an average of the paid and paid plus case methodologies).



PERCENTAGE OF MEDICAL LOSSES ON LOST-TIME CLAIMS

The data source for this analysis is the Calendar-Accident Year Financial Call, which includes the number of lost-time claims but not the number of medical-only claims. The reported medical loss totals include losses on medical-only claims. There would be a mismatch between the claim counts and losses used in the medical severity calculations unless an adjustment were made.

We use the latest available **Statistical Plan** data to estimate the portion of medical losses that arise from lost-time claims and apply this share to the total medical losses to calculate the medical losses used in the medical severity.

The average share of medical losses arising from lost-time claims used in this analysis is listed below.

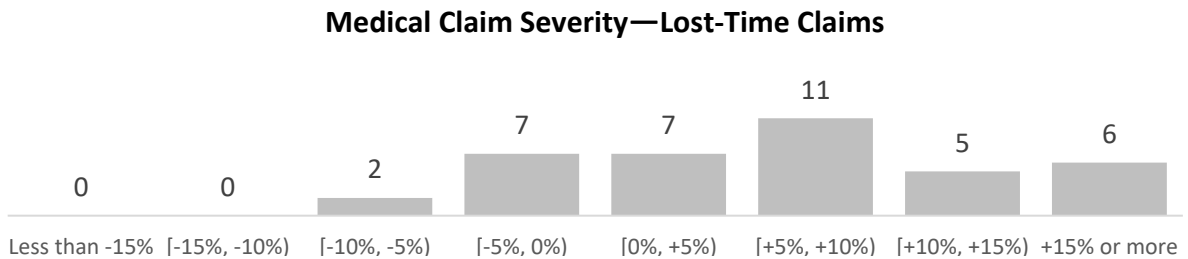
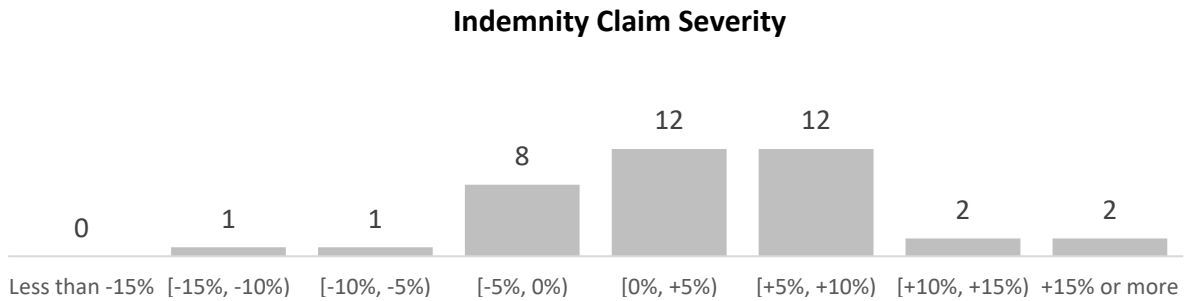
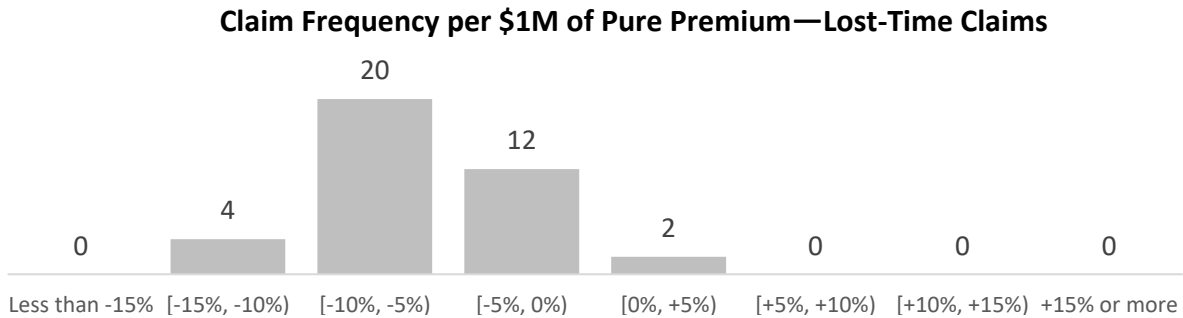
<u>Accident Year</u>	<u>Lost-Time Share of Total Medical Losses at Ultimate Report</u>
2012	0.87
2013	0.87
2014	0.87
2015	0.88
2016	0.88



FREQUENCY AND SEVERITY RESULTS

As shown below, frequency for most jurisdictions declined in the most recent year, while severity moderately increased.

Number of Jurisdictions by Percentage Change Range—2016 Versus 2015 (Based on the jurisdiction's filed development methodology)





Summary Table of Results: 2016 Versus 2015

(Based on the jurisdiction's filed development methodology)

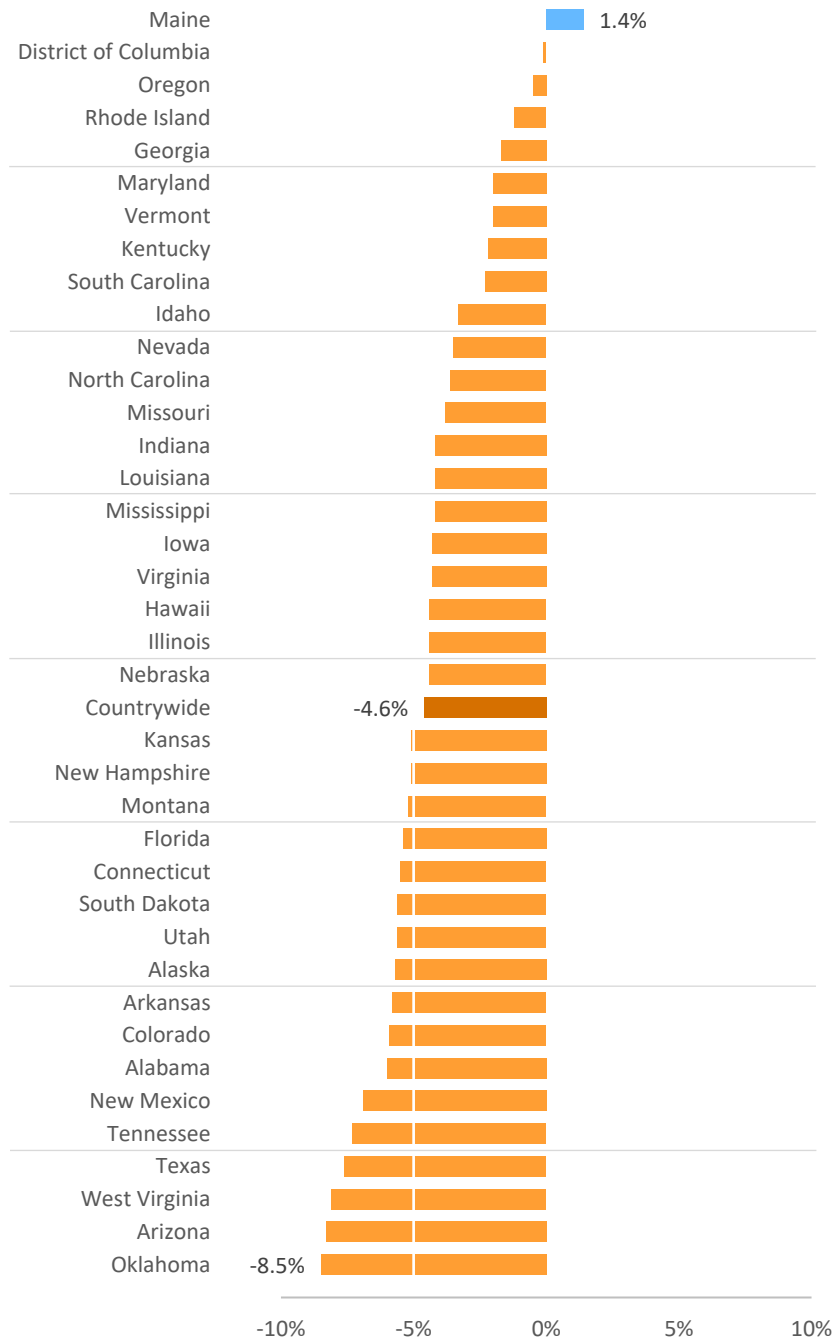
<u>Range of Percentage Change</u>	<u>Frequency per \$1M of Pure Premium</u>	<u>Indemnity Severity</u>	<u>Medical Severity</u>
Less than -15%	None	None	None
[-15%, -10%)	AZ, SD, TN, VT	MT	None
[-10%, -5%)	AK, AL, CO, CT, FL, HI, IA, ID, IL, KS, KY, LA, MO, MT, NE, NH, NM, OK, UT, WV	NM	SC, VA
[-5%, 0%)	DC, GA, IN, MD, ME, MS, NC, NV, RI, SC, TX, VA	CO, GA, MD, MS, NH, RI, TX, VA	CT, MS, MT, NC, OR, RI, UT
[0%, +5%)	AR, OR	CT, IA, IL, KS, KY, MO, NC, NV, OK, SC, UT, WV	CO, IL, KY, LA, NE, OK, SD
[+5%, +10%)	None	AL, AR, AZ, FL, ID, IN, LA, ME, NE, OR, SD, VT	AZ, FL, GA, ID, IN, IA, MD, ME, NM, TX, WV
[+10%, +15%)	None	HI, TN	AR, HI, NH, TN, VT
+15% or more	None	AK, DC	AK, AL, DC, KS, MO, NV



Most jurisdictions have shown an average decrease in lost-time frequency per \$1M of pure premium across Accident Years 2012 through 2016, consistent with the countrywide average change of -4.6%.

Lost-Time Frequency—Average Annual Changes From 2012–2016

(Based on the jurisdiction’s filed development methodology)





In general, both indemnity and medical severity have increased over the last five years. In addition, those states with the largest increases in medical severity also tend to have more significant increases in indemnity severity.

Lost-Time Severity—Average Annual Changes From 2012–2016

(Based on the jurisdiction’s filed development methodology)

