



Workers Compensation Claim Frequency

OVERVIEW

The Great Recession of 2007–2009 is likely the most serious and long lasting economic contraction since the Great Depression. Several factors related to the recession, which will be discussed in this paper, have had a considerable influence on claim frequency. Claim frequency for workers compensation injuries increased 3% in 2010, marking the first increase since 1997. Although claim frequency is up, the good news is that NCCI's latest data reveals that the growth in average indemnity and medical cost per claim slowed in 2010.

This paper is subdivided into three sections, which are listed below along with key findings. The first section is based on NCCI's Financial Aggregate Data, which provides the latest available information (through Accident Year 2010). Sections two and three are based on NCCI's **Statistical Plan** data. Though not as recent as financial data, **Statistical Plan** data contains detailed policy information that allows us to analyze frequency by various categories (e.g., by claim characteristics, by employer characteristics).

2010 Overall Trends

- Claim frequency for lost-time claims in Accident Year (AY) 2010 was 3% higher than in AY 2009, according to preliminary estimates. Prior to this year's uptick, claim frequency had been declining at an average rate of 4.3% per year since 1990, with the only other increases occurring in 1994 and 1997.
- A number of recession-related factors may have put upward pressure on the AY 2010 frequency measure, including an increase in new hires as the recovery began to take hold and a possible influx of small lost-time claims that may have been medical-only claims in previous years.
- For indemnity and medical combined, the change in average cost per lost-time claim was 0% for 2010.

Various Frequency Measures

- Claim frequency measured relative to payroll (frequency per payroll) varies far more by class than frequency measured relative to premium (frequency per premium).
- Changes in industry mix typically have a greater impact on frequency per payroll than on frequency per premium measures.
- The decline in the construction industry resulting from the recession placed downward pressure on frequency per payroll and upward pressure on frequency per premium.

Frequency Changes by Claim Characteristics and by Employer Characteristics

- Prior to the increase in Accident Year 2010, the decline in frequency had been widespread. Based on **Statistical Plan** data, over the latest five complete policy years (which reflect data prior to 2010):
 - Frequency declines were observed for all industries, geographic regions, and employer sizes, as well as for most claim types.
 - Claims considered "Likely-to-Develop" exhibited a larger percentage frequency decline than those considered "Not-Likely-to-Develop."

- Some of the more complex claims, such as lower back, declined more than average over the latest five years.
- Frequency changes varied considerably by type of injury.
- Frequency declines were relatively consistent by size of loss for claims under \$50,000. Claims above \$50,000 exhibited less of a decline.

2010 OVERALL TRENDS

Exhibit 1 is based on NCCI's Financial Aggregate Data Call, representing experience for NCCI-affiliated carriers. The results for Accident Year 2010 are preliminary.

As communicated at NCCI's *Annual Issues Symposium 2011*, Exhibit 1 indicates that workers compensation claim frequency for lost-time claims has increased 3% in 2010. This represents the first increase since 1997 and only the third time that frequency has increased in the last 20 years. Reductions in claim frequency have been a major bright spot for workers compensation. Prior to this year's uptick, injury rates had fallen by 56.4% from 1990 through 2009, an average decrease of 4.3% per year.

Accident year frequency, as measured here, is the number of lost-time claims for injuries occurring in a given year per \$1 million of earned pure premium adjusted to current average weekly wages and current voluntary loss cost levels.

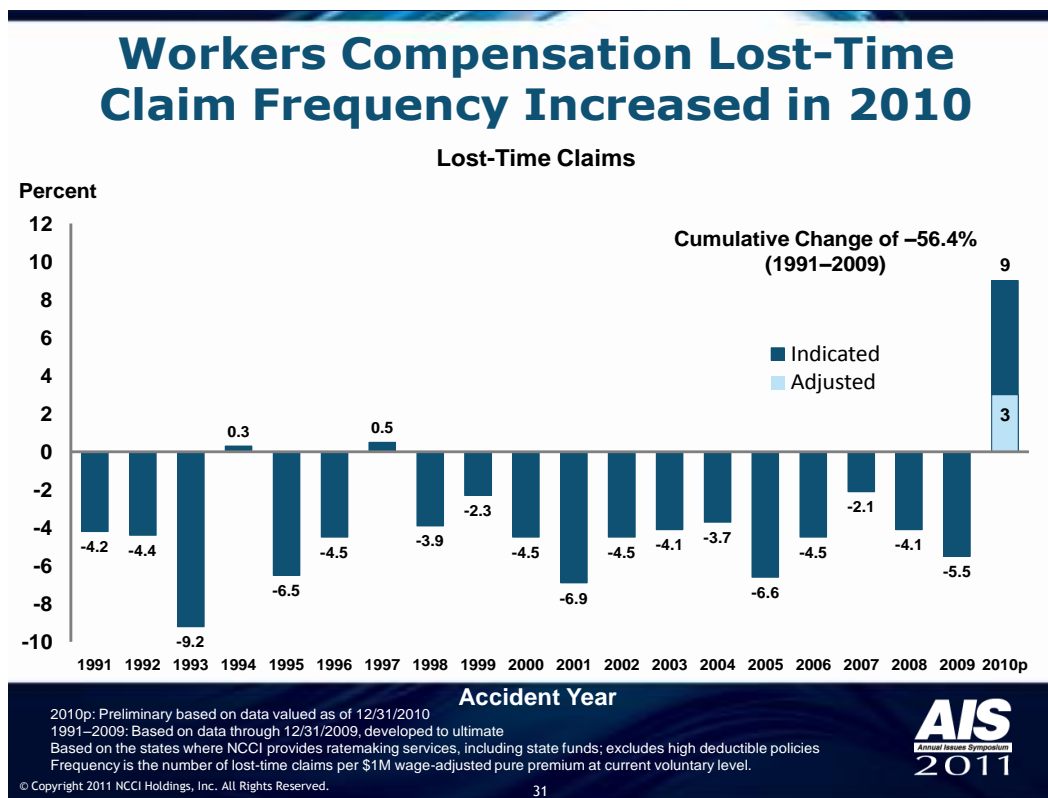


Exhibit 1: Lost-Time Claim Frequency Increases in 2010

The most recent recession is now viewed by most economists as the most severe economic downturn since the Great Depression. NCCI determined that several distortions in the data, stemming from the recession and subsequent recovery, had a significantly greater effect on frequency than would be expected in a normal economy. NCCI's standard calculation initially yielded an increase in frequency from Accident Year 2009 to 2010 of 9%. However, NCCI identified three factors that were distorting the frequency measure in 2010: change in industry mix, change in hours worked per week, and change in premium audits. Once adjustments are made for these factors, frequency is still up 3%.

The first recessionary factor analyzed was a continued shift in industry mix away from the construction sector in 2010. The contracting industry group generally has a lower frequency per premium than all industries combined (see section below titled "Various Frequency Measures"). Hence, the decline in contracting put upward pressure on Accident Year 2010 frequency per premium.

The second factor studied was an increase in average weekly hours¹ in 2010. Exhibit 2 displays changes in average hours worked per week by quarter over the latest five years. Following decreases in 2008 and 2009 as a result of the recession, average weekly hours for all private employment increased in 2010 by approximately 0.6%. An increase in hours worked per week is expected to generate an increase in claims, which, without a corresponding increase in number of workers, will put upward pressure on frequency.

NCCI estimates that approximately one percentage point of the 2010 indicated change in frequency of 9% can be attributed to the two factors above.

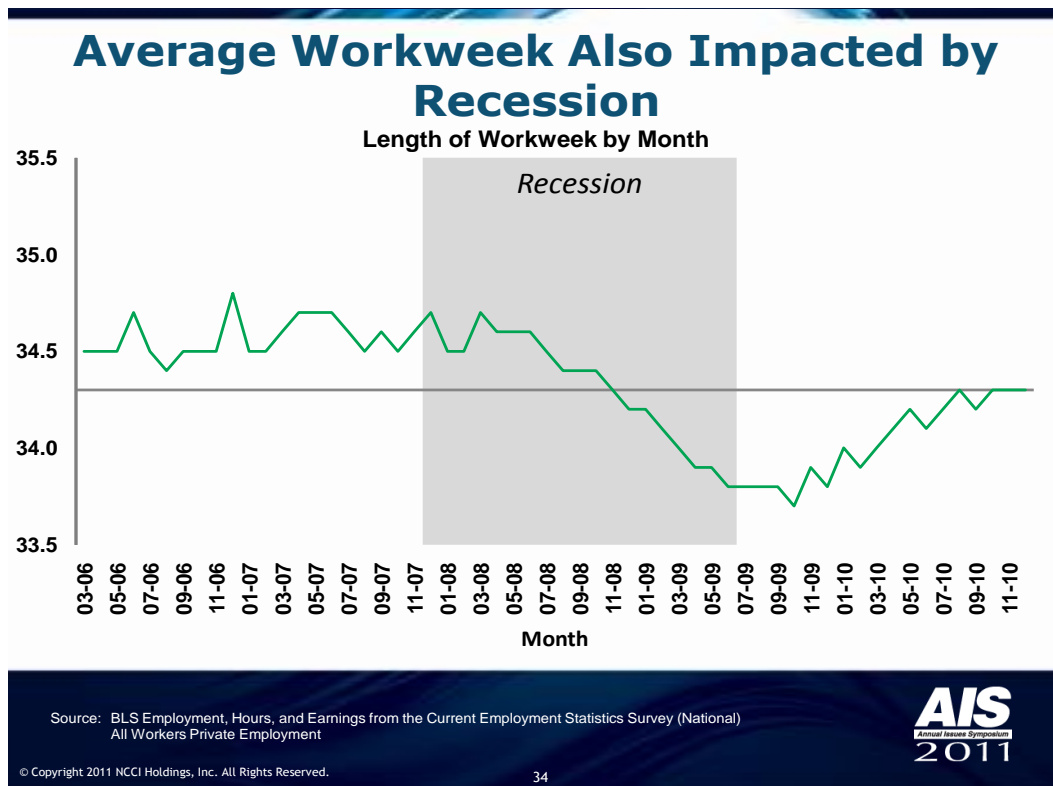


Exhibit 2: Average Hours per Week Increased in 2010

¹ US Bureau of Labor Statistics, Current Employment Statistics (CES)

The third factor reviewed had, by far, the largest impact on the 2010 change in frequency. The denominator of the NCCI accident year frequency measure is calendar year earned premium, which includes audit premiums related to prior years' policies. Audits booked (and earned) in 2010 were significantly lower than anticipated as a result of the recession. Under more stable economic conditions, premium audits typically produce additions to premium. However, during the recession, it became apparent that estimated payrolls overstated final payroll, and, therefore, audits resulted in return premiums. This change in the direction of premium audits had a significant impact on the calendar year earned premiums used in the denominator of the NCCI accident year frequency calculation. NCCI estimates that the Calendar Year 2010 premium understated the premium on actual exposures earned by 3%. In contrast, the Calendar Year 2009 premium overstated the premium on actual exposures earned by 2%. These distortions combined to produce a five-percentage-point overstatement in the claim frequency change for 2010, as measured using calendar year earned premium.

Exhibit 3 shows the dramatic impact that the recession had on premium audits. Most notably, the declines in premium audit adjustments that occurred during 2010 stemmed from policies with effective dates from late 2008 through late 2009.

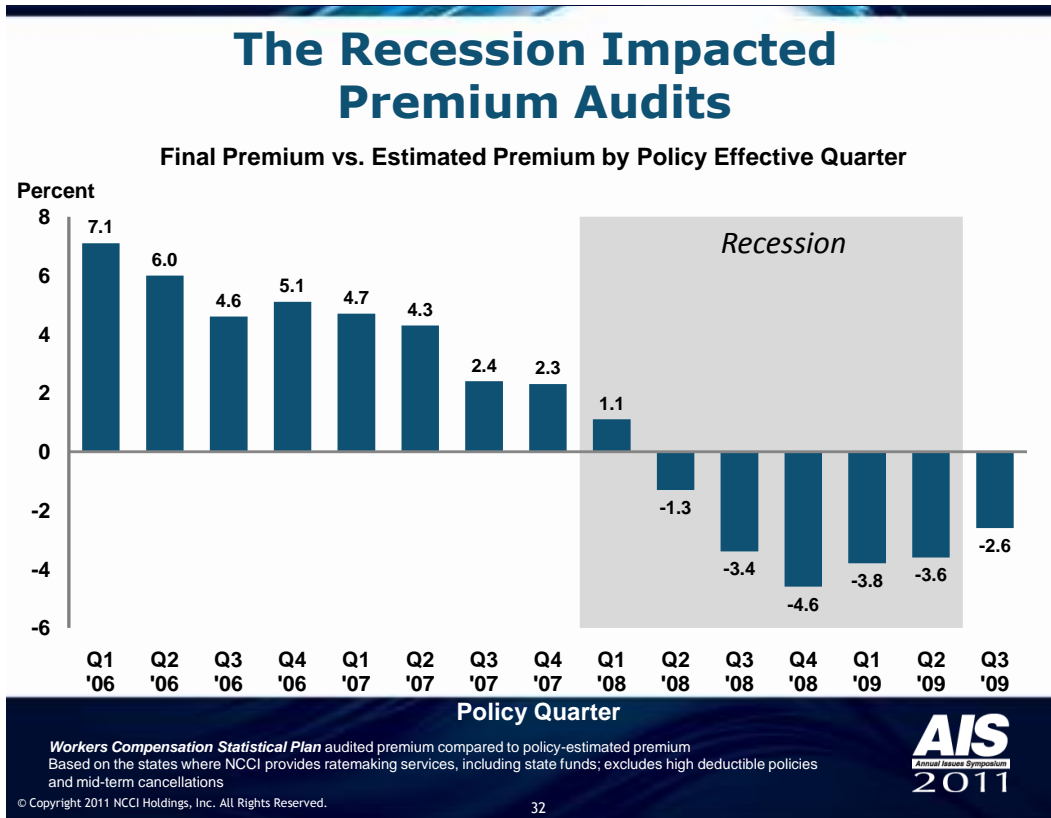


Exhibit 3: Recession Impact on Premium Audits

As displayed in Exhibit 4, the preliminary change in frequency from AY 2009 to AY 2010 of +9% reduces to +3% after adjusting for the three economic factors described above. The exhibit also shows the modest impact of these adjustments on the change in frequency from AY 2008 to AY 2009.

<h2 style="text-align: center;">Adjustments to Indicated Change in Lost-Time Frequency</h2> <p style="text-align: center;">Accident Year 2009–2010</p>		
Estimated Adjustments to Frequency Change		
	2009	2010
Unadjusted Frequency Change	-5%	+9%
CY Premium Adjustment	-1%	-5%
Workweek and Industry Group Mix	0%	-1%
Adjusted Frequency Change	-6%	+3%

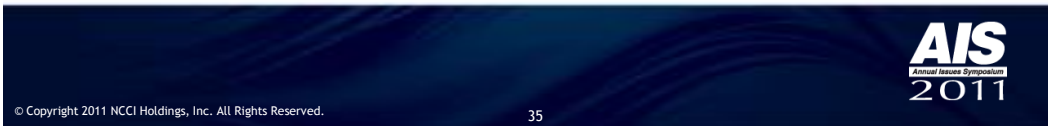


Exhibit 4: Frequency Changes Adjusted for Recessionary Influences

Several factors may have contributed to the abrupt halt in 2010 in the long-term decline in frequency:

- The increase was likely supported by the firming job market and modest increase in employment since the start of the recovery in the middle of 2009. New hires generally have higher claim frequency than longer-term employees.
- Some insurance experts have suggested that workers, fearful of losing their jobs, may have postponed filing workers compensation claims, but now appear less hesitant to file claims as the economy has shown signs of modest improvement. While the extent to which this phenomenon occurred is unclear, it may have contributed to the observed increase in claim frequency in 2010.
- There is evidence of an influx of small lost-time claims in 2010, which may have been medical-only claims in previous years. A lack of available light duty jobs for injured workers to return to might have contributed. NCCI will be researching this issue further in the coming year.

It remains to be seen if the 2010 uptick in frequency represents a “new normal” or a minor blip in the long-term decline in frequency.

Although claim frequency increased, workers compensation claim costs remained relatively flat in 2010. For indemnity and medical combined, the change in average lost-time claim costs was 0% for 2010.

Exhibit 5 displays the average indemnity claim costs since 1991, along with the corresponding year-to-year changes. NCCI estimates that the average indemnity claim cost decreased 3% in 2010. One theory is that the decrease may be affected by an influx of small lost-time claims into the system that in previous years may have been medical-only claims. As noted above, NCCI will be investigating this possibility in the coming year.

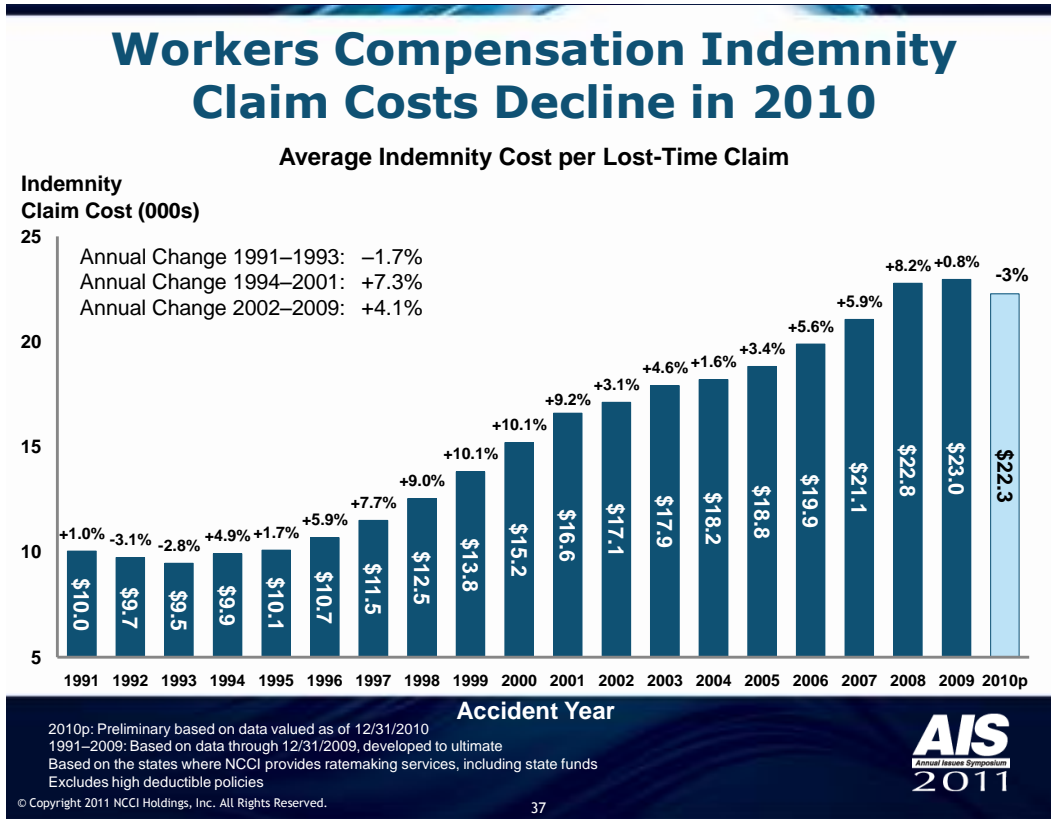


Exhibit 5: Change in Average Indemnity Cost per Lost-Time Claim

As shown in Exhibit 6, the average medical claim cost per lost-time claim increased by 2%. This represents the smallest increase in medical costs associated with lost-time claims since 1993. While the underlying drivers of medical costs remain, the moderate growth observed in 2010 may be due to an influx of small lost-time claims, as noted above.

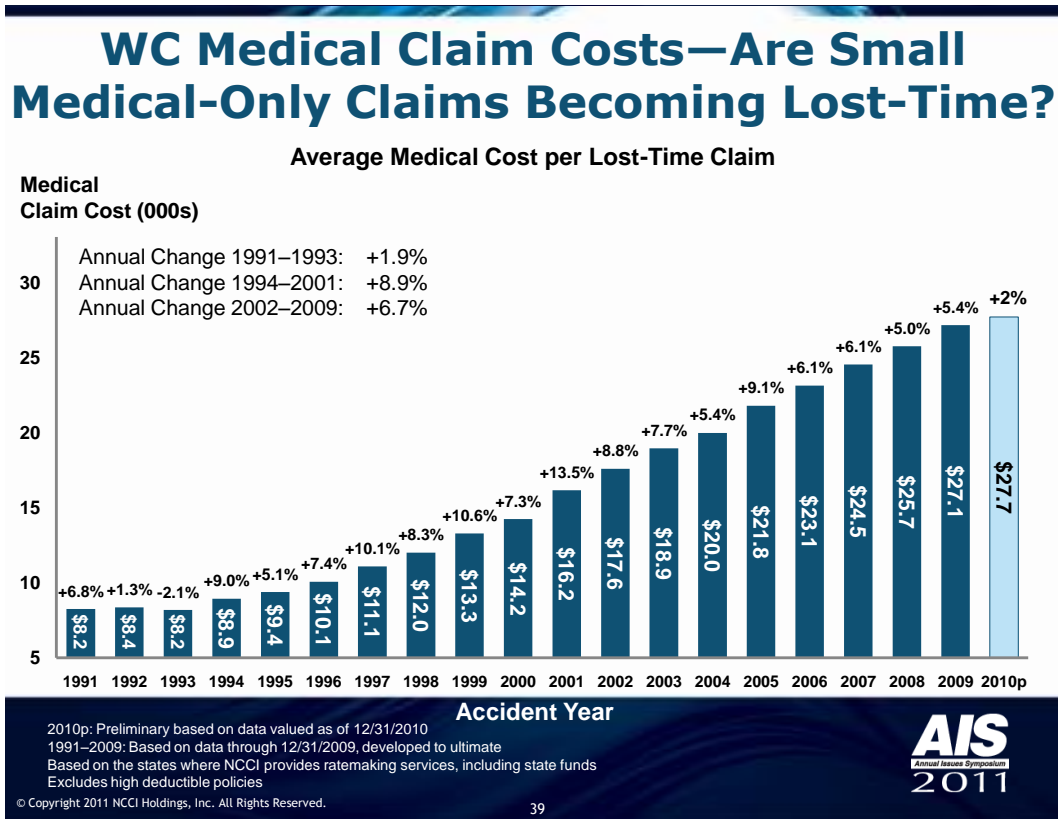


Exhibit 6: Change in Average Medical Cost per Lost-Time Claim

Exhibit 7 indicates that in 2010, the growth in workers compensation average medical costs lagged the Medical Consumer Price Index (CPI) for the first time since 1995. The Medical CPI is a measure of “price” inflation for all forms of healthcare and does not capture changes in utilization. Increases in utilization (e.g., changes in number and types of treatments per claim, and changes in claim diagnosis) contributed significantly to the differences between changes in medical severity and the Medical CPI through 2001. Since 2001, the impact of utilization has subsided somewhat, primarily because the number of treatments per claim has remained fairly steady.²

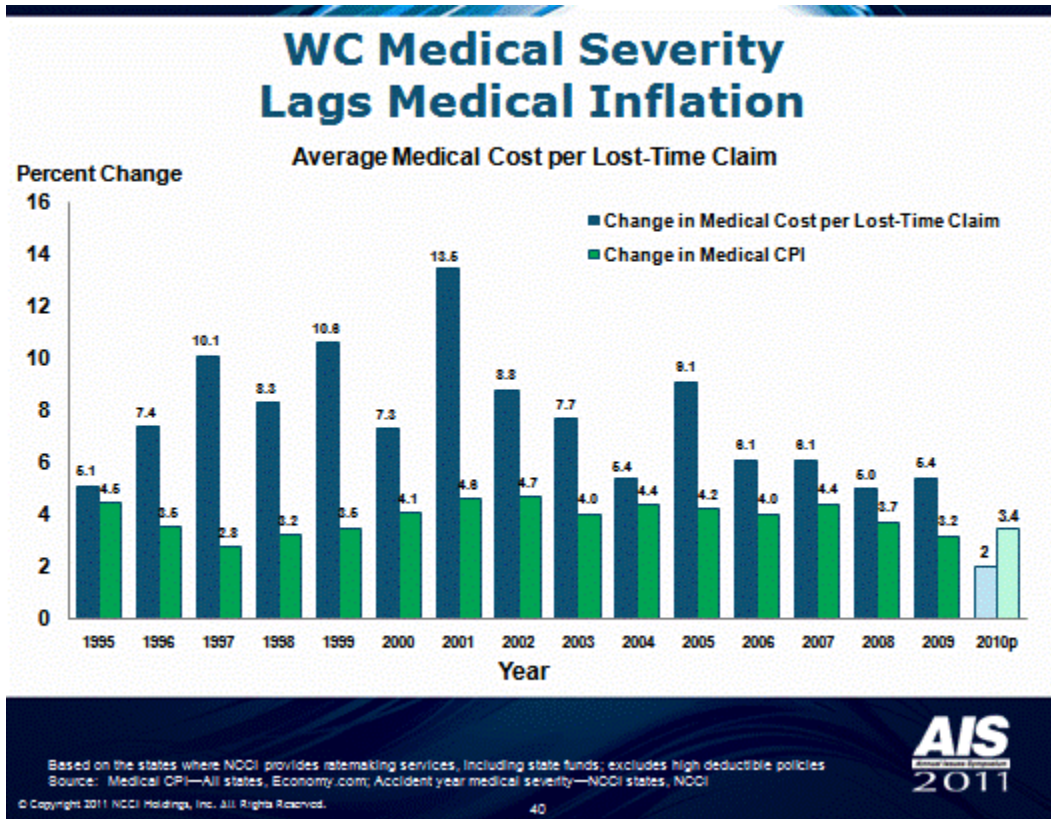


Exhibit 7: Workers Compensation Medical Cost Changes Relative to the Medical CPI

² See 2010 NCCI report, *Significant Changes in the Factors Driving Medical Severity; 1996–2001 vs. 2001–2006*, by Tanya Restrepo and Harry Shuford, NCCI 2010, available on ncci.com

VARIOUS FREQUENCY MEASURES

In addition to updating traditional views of frequency (e.g., claim characteristics, employer characteristics) for this year's update, NCCI decided to take an expanded look at various other frequency measures. Specifically, the effects of shifts in industry mix on these measures are explored.

The analyses discussed in the remainder of this paper are based on **Statistical Plan** data in states for which NCCI provides ratemaking services (excluding West Virginia).³

The term "frequency" can be defined in many different ways. In this section, NCCI examines two frequency measures for policy years expiring (PYE) in 2005 through 2009. We will explore how shifts in industry mix can have much different effects on these measures. Note that for this analysis, PYE 2009 was the latest policy year available from the **Statistical Plan** data. This analysis does not include Accident Year 2010, which revealed the uptick in frequency, as noted above. The frequency measures used in this section are as follows:

Frequency per Payroll—Lost-time claims at 1st report⁴ per \$1 million payroll, adjusted for changes in QCEW⁵ average weekly wage by state through PYE 2009

Frequency per Premium—Lost-time claims at 1st report per \$1 million manual premium (rate times payroll), adjusted (on-leveled) to PYE 2009 average carrier rates by class and state, and also adjusted for changes in average weekly wages

Note that the change in frequency per payroll is identical to the change in frequency per premium at the state and class level. This is due to the fact that we have adjusted (on-leveled) premiums to a current rate level that cancels when calculating a "change" in frequency.

³ West Virginia became an NCCI state effective July 1, 2006

⁴ 1st report is valued 18 months after policy effective date

⁵ US Bureau of Labor Statistics: Quarterly Census of Employment and Wages

On Exhibit 8, we have plotted the above frequency measures for a two diverse classes, with frequency per premium on the horizontal axis and frequency per payroll on the vertical axis. The chart is divided into four well defined, easily visible quadrants.⁶ The frequencies have been indexed to 1.00, which represents the average frequency for all classes in all NCCI states.

The Roofing class appears in the upper-left quadrant. While this class has a very high frequency per payroll relative to all other classes as expected, it has a relatively low frequency per premium. This is true for most construction classes because the high frequency per payroll is reflected via higher premiums. However, claim severity, which is also a component of premium, is also very high for the construction industry (about 1.5 times that of all industries). Hence, the ratio of claims to premium is low for this industry.

The Fast Food Restaurant class has slightly higher-than-average frequency per payroll, but significantly higher-than-average frequency per premium. This is due to a relatively low severity, in contrast with the Roofing class. The low severity might be attributable to lower average wages, relatively younger employees (who tend to heal faster), and a higher proportion of relatively minor injuries. The relatively high frequency may be the result of less experienced workers who tend to be more prone to accidents.

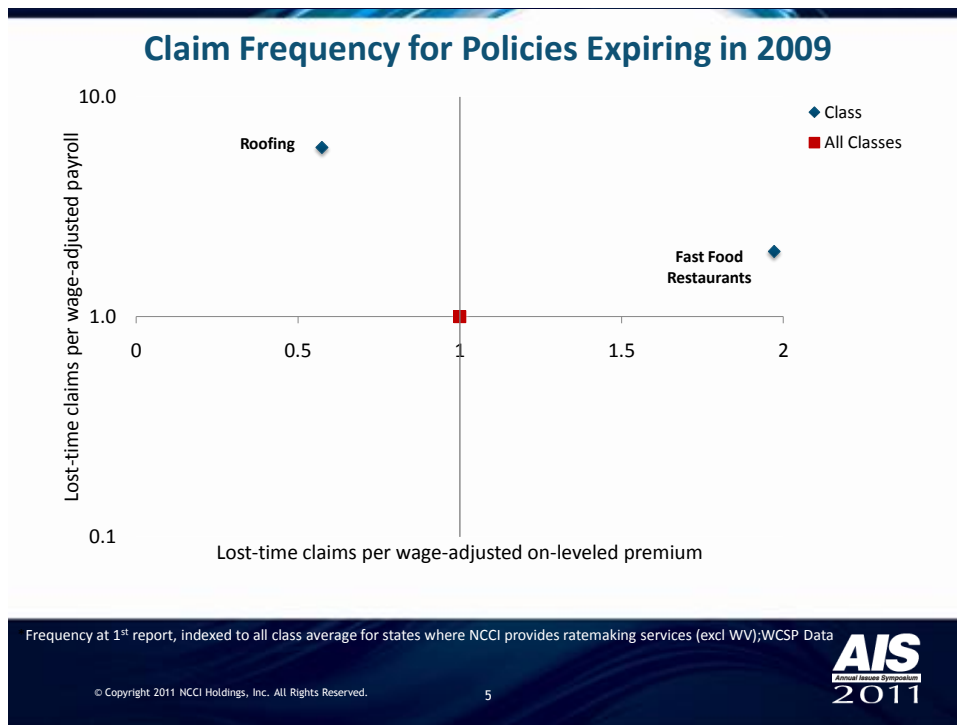


Exhibit 8: Frequency per Premium vs. Frequency per Payroll

⁶ The vertical axis is on a log scale

Exhibit 9 displays the frequency measures for the largest 50 classes in terms of premium volume in PYE 2009. Most of these classes have higher-than-average frequency per payroll and, therefore, appear in the upper quadrants. The reason that so many classes have higher-than-average frequency per payroll is that the average of all classes is greatly impacted by the Clerical Office class (Code 8810), which has extremely low frequency per payroll, as well as very high payroll volume.

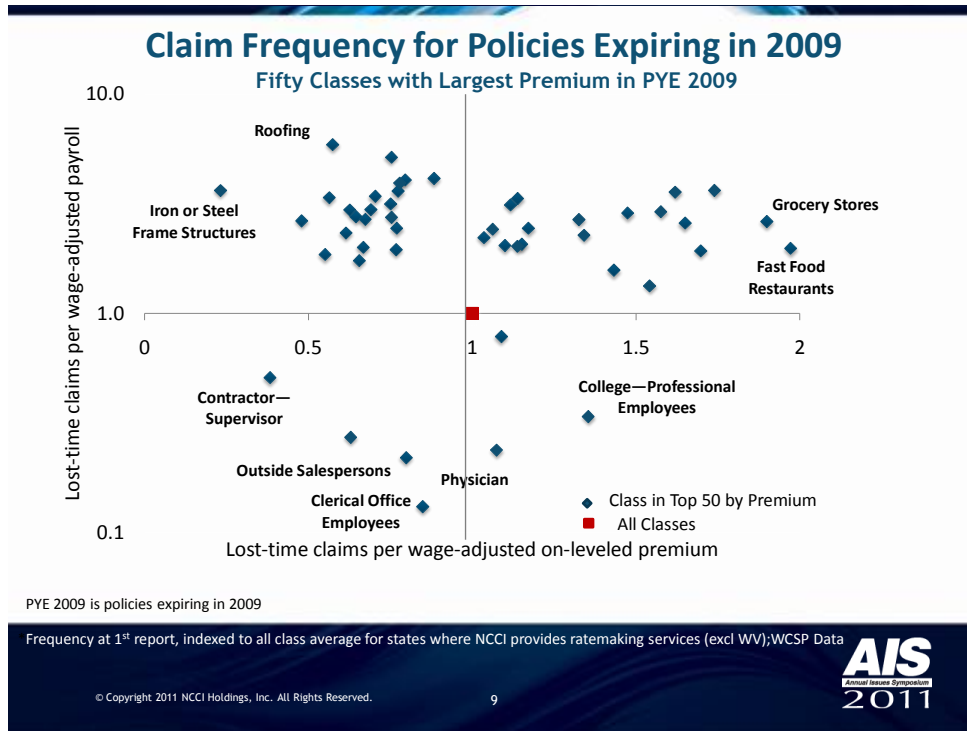


Exhibit 9: Top 50 Classes by Premium

Exhibit 10 displays the data in Exhibit 9 in a slightly different format. We have converted the graph to a linear scale in order to better illustrate how variance by class differs for the two frequency measures. Frequency per \$1 million wage-adjusted payroll in PYE 2009 varies considerably for the 50 classes displayed. For example, as noted in the discussion of Exhibit 8, Contracting classes (e.g., Roofing, Carpentry) have very high frequency per payroll, whereas Office & Clerical classes have very low frequency per payroll. For the largest 50 classes in terms of premium volume, frequency per payroll for the highest frequency class (Roofing) is nearly 45 times the frequency per payroll of the lowest frequency class (Clerical Office). Hence, a change in industry (or class) mix can have a significant impact on overall frequency per payroll for all classes combined.

However, frequency per premium varies considerably less by class. For the largest 50 classes in terms of premium volume, frequency per premium for the highest frequency class (Charitable Organization Employees) is less than 10 times the frequency per premium of the lowest frequency class (Iron or Steel Erection). Therefore, a change in industry (or class) mix would not be expected to have a significant impact on overall frequency per premium for all classes combined.

As noted earlier, since claim frequency is reflected in premiums charged, differences in frequency per premium by class are primarily due to varying severity by class and have little to do with claim frequency itself. Varying rate adequacy by class would also impact this measure to the extent that premiums do not accurately reflect the underlying frequency and severity of the class in a given time period.

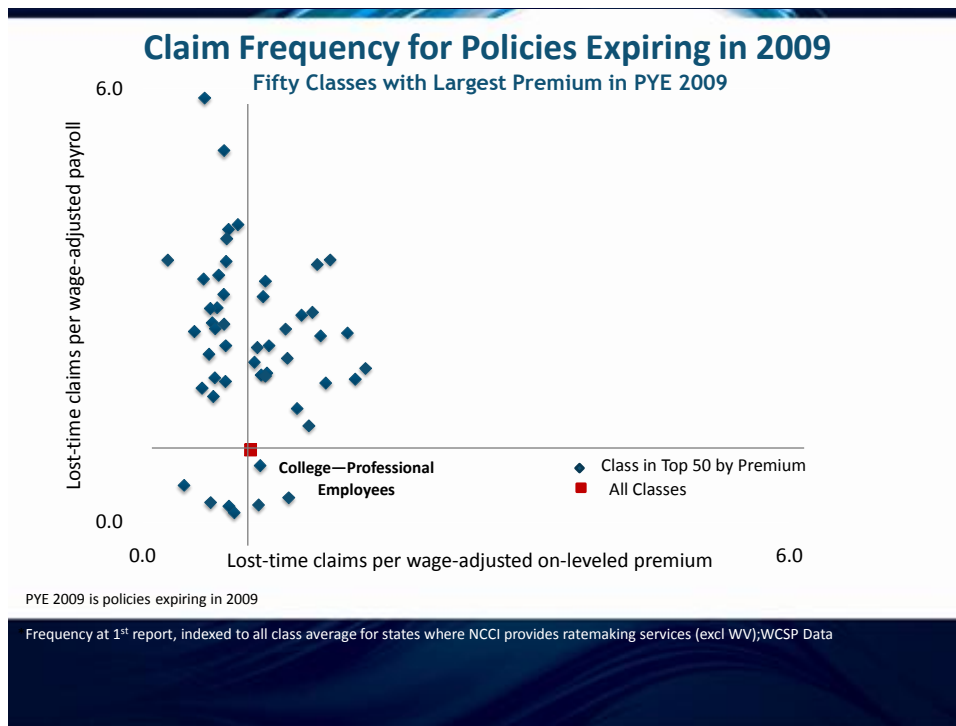


Exhibit 10: Top 50 Classes by Premium With Linear Scale

To illustrate the effect of a shift in industry mix, Exhibit 11 focuses on the 50 classes that experienced the largest premium decline from PYE 2008 to PYE 2009 as a result of the recent recession. The weighted average of all 50 classes represents the average frequency of the business that “left the market.”

The exodus of these classes placed downward pressure on frequency per payroll from PYE 2008 to PYE 2009 because the average of the 50 classes is greater than the average of all classes. However, with respect to frequency per premium, the average of the 50 classes is slightly lower than the average of all classes, with some higher and some lower. Thus, the shift in industry mix placed a minimal amount of upward pressure on frequency per premium from PYE 2008 to PYE 2009.

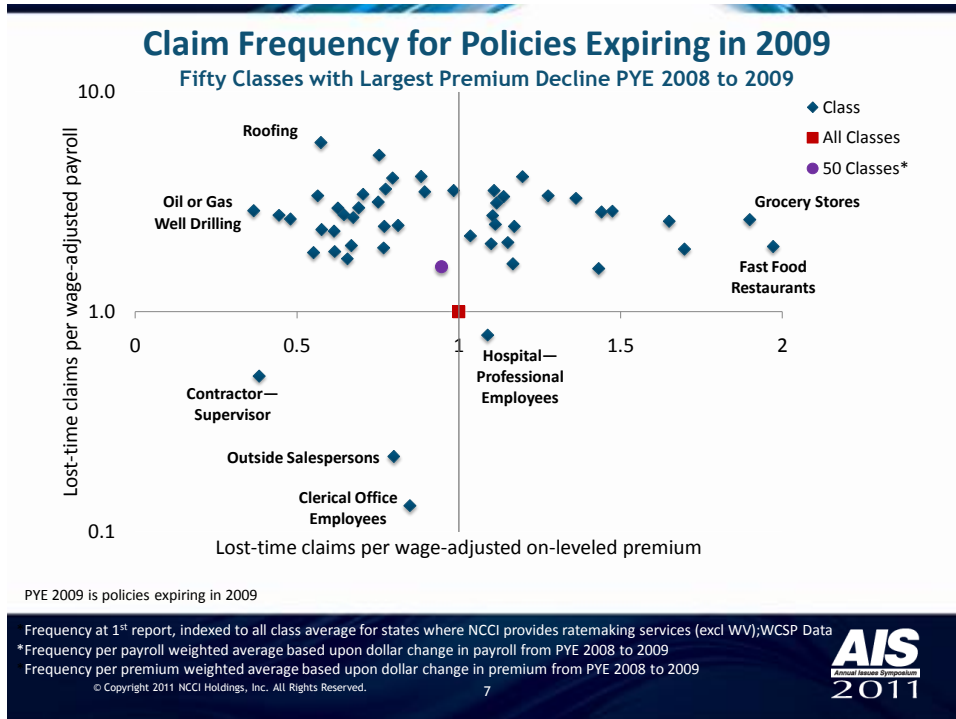


Exhibit 11: Frequency for 50 Classes With Largest Premium Declines

Exhibits 12 and 13 display frequency changes according to measures used in previous NCCI frequency studies. The section below titled “Average Weekly Hours” will further refine this analysis by examining the impact of changes in the average number of hours worked per week.

Exhibit 12 displays the changes in frequency by NCCI industry group from PYE 2008 to PYE 2009. During this period, the recent recession had a considerable impact, with payroll volume decreasing considerably in the construction and manufacturing sectors.

- As shown in columns 2 and 3, the changes in frequency per payroll and frequency per premium over the period are considerably different, at –8.4% and –6.1% respectively. Note, however, that the changes in the two measures are somewhat closer together by industry group (e.g., –5.9% and –6.0% for the Office & Clerical group). This is not unexpected for two reasons: First, the classes within each Industry Group are homogeneous to begin with. Second, as noted earlier, the changes in the two measures are identical at the state and class level.
- In Column 4 we have adjusted for changes in industry mix. Using the frequency per payroll measure, we recalculated the countrywide PYE 2009 frequency per payroll as a weighted average of the PYE 2009 frequencies by class and state using payroll from PYE 2008 as weights. In other words, Column 4 indicates what the changes by industry group and total would have been if the payroll volume by class and state stayed the same from PYE 2008 to PYE 2009.

After adjustment for industry mix, the overall change in frequency per payroll increased from –8.4% to –6.3%. This is due to the fact that payroll declined in the high frequency per payroll Construction & Manufacturing sectors over the period. Payroll declined to a lesser extent in the low frequency per payroll Office & Clerical sector, increasing its share of payroll and, thus, putting downward pressure on overall frequency.

- Column 4 also represents the “mix-adjusted” change in frequency per premium. (See Appendix for proof that the mix-adjusted change in frequency per payroll is equal to the mix-adjusted change in frequency per premium.)

We recalculated the countrywide 2009 frequency per premium as a weighted average of the PYE 2009 frequencies by class and state using premium from PYE 2008 as weights. In other words, Column 4 indicates what the changes by industry group and total would have been if the premium volume by class and state stayed the same from PYE 2008 to PYE 2009.

After adjustment for industry mix, the overall change in frequency per premium decreased from –6.1% to –6.3%. As expected, the effect of changing industry mix was minimal, with the shifts that occurred having offsetting effects.

- We performed a “class contribution” analysis on the PYE 2008 to PYE 2009 change in frequency per payroll of –8.4% and found that, for the most part, the change was not driven by any particular class with one exception. The class with the largest impact was Retail Stores (Class Code 8017). This class, which comprises over 2% of countrywide payroll, experienced a decline in frequency per payroll of 10.0%. By excluding this class, the overall change in frequency increased from –8.4% to –7.9%.

Frequency Change by Industry Group For Policies Expiring in 2008 versus 2009

(1) Industry Group	(2) Frequency Per Wage Adjusted Payroll	(3) Frequency Per Wage Adjusted On-Leveled Premium	(4) Frequency Adjusted for Changes in Industry Mix*	(2)-(4) Impact of Mix Adjustment on Frequency Per Payroll	(3)-(4) Impact of Mix Adjustment on Frequency Per Premium
Manufacturing	-10.3%	-9.3%	-8.4%	-1.9%	-0.9%
Contracting	-9.0%	-8.7%	-6.4%	-2.6%	-2.3%
Office & Clerical	-5.9%	-6.0%	-6.3%	0.4%	0.3%
Goods & Services	-5.6%	-5.4%	-6.1%	0.5%	0.7%
Miscellaneous	-5.3%	-4.5%	-4.5%	-0.8%	0.0%
ALL	-8.4%	-6.1%	-6.3%	-2.1%	0.2%

* Mix adjusted changes in frequency per wage adjusted payroll and in frequency per wage adjusted on-leveled premium are identical

Exhibit 12: Changes in Frequency From PYE 2008 to PYE 2009

Exhibit 13 displays the corresponding changes in frequency by NCCI industry group from PYE 2005 to PYE 2009.

- As shown in Columns 2 and 3, the changes in frequency per payroll and frequency per premium are –20.5% and –18.3% respectively.
- In Column 4, we have again adjusted for changes in industry mix. Column 4 indicates what the changes by industry group and total would have been if the payroll volume by class and state stayed the same from PYE 2005 to PYE 2009. After adjustment for industry mix, the overall change in frequency per payroll increased from –20.5% to –16.2%. This result is primarily due to an increase in the Office & Clerical industry group's payroll (and share of total payroll) over the five-year period. This placed downward pressure on frequency because frequency per payroll is very low for the Office & Clerical sector.
- As noted earlier, Column 4 also represents the mix-adjusted change in frequency per premium. After adjustment for industry mix, the overall change in frequency per premium increased from –18.3% to –16.2%. Recall that frequency per premium does not vary significantly by class (Exhibit 10 above). Hence, a change in industry (or class) mix is typically not expected to have a material impact on overall frequency. Upon further examination, we determined that the –2.1% impact of industry mix was primarily attributable to the Contracting and Miscellaneous industry groups. That is, the change in industry mix had the greatest influence on these two sectors. Drilling down further revealed that within the Contracting group, a shift occurred from classes whose frequency per premium was higher than the overall Contracting group average to classes whose frequency per premium was lower than the Contracting group average. This placed downward pressure on frequency per premium for the Contracting group. A similar phenomenon occurred within the Miscellaneous industry group.

Frequency Change by Industry Group For Policies Expiring in 2005 versus 2009

(1) Industry Group	(2) Frequency Per Wage Adjusted Payroll	(3) Frequency Per Wage Adjusted On-Levelled Premium	(4) Frequency Adjusted for Changes in Industry Mix*	(2)-(4) Impact of Mix Adjustment on Frequency Per Payroll	(3)-(4) Impact of Mix Adjustment on Frequency Per Premium
Manufacturing	-21.9%	-21.4%	-18.8%	-3.1%	-2.6%
Contracting	-26.3%	-25.3%	-21.4%	-4.9%	-3.9%
Office & Clerical	-23.6%	-23.6%	-23.2%	-0.4%	-0.4%
Goods & Services	-14.2%	-12.7%	-13.6%	-0.6%	0.9%
Miscellaneous	-12.7%	-13.6%	-7.0%	-5.7%	-6.6%
ALL	-20.5%	-18.3%	-16.2%	-4.3%	-2.1%

* Mix adjusted changes in frequency per wage adjusted payroll and in frequency per wage adjusted on-levelled premium are identical

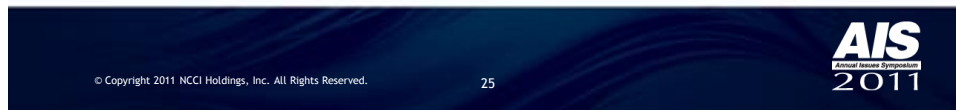


Exhibit 13: Changes in Frequency From PYE 2005 to PYE 2009

Exhibit 14 displays the frequency measures underlying the changes displayed in Exhibits 12 and 13:

Industry Group	2005	2008	2009
	Freq Per \$M WA Payroll	Freq Per \$M WA Payroll	Freq Per \$M WA Payroll
Manufacturing	0.490	0.427	0.383
Contracting	0.656	0.531	0.483
Office & Clerical	0.053	0.043	0.041
Goods and Services	0.507	0.461	0.435
Misc.	0.690	0.637	0.603
ALL	0.260	0.225	0.206

2009	2009
Mix Adjusted (using 2005 Payroll)	Mix Adjusted (using 2008 Payroll)
0.398	0.391
0.516	0.498
0.041	0.041
0.438	0.433
0.642	0.608
0.218	0.211

Industry Group	2005	2008	2009
	Freq Per \$M WA OL Premium	Freq Per \$M WA OL Premium	Freq Per \$M WA OL Premium
Manufacturing	12.583	10.906	9.896
Contracting	8.033	6.576	6.004
Office & Clerical	11.852	9.637	9.056
Goods and Services	15.647	14.427	13.654
Misc.	11.067	10.009	9.561
ALL	11.860	10.320	9.691

2009	2009
Mix Adjusted (using 2005 Premium)	Mix Adjusted (using 2008 Premium)
10.222	9.973
6.316	6.165
9.102	9.017
13.513	13.531
10.287	9.505
9.939	9.668

WA—Wage adjusted to policies expiring in 2009

OL—Adjusted (on-leveled) to average carrier rate level for policies expiring in 2009

Exhibit 14: Frequency Measures by Industry Group

Exhibit 15 displays the changes in frequency by state from PYE 2008 to PYE 2009. Year-to-year frequency changes differ by state and can be volatile. For a given state, the changes in frequency per payroll and frequency per premium will typically differ (see Columns 2 and 3 below). However, as noted previously, at the state and class level, these changes are identical.

(1) State	(2) Frequency per \$M Wage Adjusted Payroll	(3) Frequency per \$M Wage Adjusted On-leveled Premium	(4) Frequency Adjusted for Changes in Industry Mix
AL	-8.0%	-4.6%	-6.2%
AZ	-8.8%	-1.6%	-3.6%
AR	-7.9%	-10.4%	-9.4%
CO	-8.7%	-7.6%	-7.3%
CT	-2.9%	-1.6%	-3.8%
DC	-8.7%	-5.2%	-6.9%
FL	-8.2%	-4.2%	-5.2%
GA	-5.6%	-1.5%	-2.3%
ID	-8.9%	-7.1%	-7.1%
IL	-8.5%	-7.2%	-7.8%
IN	-10.1%	-6.7%	-7.5%
IA	-8.2%	-4.6%	-5.9%
KS	-5.6%	-4.0%	-4.3%
KY	-7.8%	-6.6%	-5.0%
LA	-7.9%	-9.4%	-7.6%
ME	-0.8%	3.1%	0.8%
MD	-7.2%	-6.1%	-7.1%
MS	-8.8%	-6.8%	-4.7%
MO	-9.5%	-7.2%	-6.4%
MT	-8.0%	-5.3%	-6.0%
NE	-7.3%	-5.7%	-6.2%
NV	-9.7%	-9.8%	-8.0%
NH	-9.6%	-6.9%	-8.8%
NM	-3.1%	0.5%	-2.2%
NC	-7.8%	-4.2%	-4.9%
OK	-2.0%	-1.9%	-2.0%
OR	-13.0%	-8.5%	-8.3%
RI	-7.9%	-5.5%	-7.5%
SC	-9.2%	-4.8%	-6.1%
SD	-4.6%	-3.0%	-3.0%
TN	-9.1%	-5.9%	-7.5%
TX	-10.4%	-8.9%	-8.5%
UT	-15.1%	-10.2%	-11.2%
VT	-6.2%	-3.6%	-4.0%
VA	-8.6%	-6.6%	-7.0%
HI	-10.5%	-8.3%	-8.2%
AK	-12.1%	-9.2%	-9.5%
Total	-8.4%	-6.1%	-6.3%

Exhibit 15: Frequency Changes by State From PYE 2008 to PYE 2009

Exhibit 16 displays the changes in frequency by state from PYE 2005 to PYE 2009.

(1) State	(2) Frequency per \$M Wage Adjusted Payroll	(3) Frequency per \$M Wage Adjusted On-leveled Premium	(4) Frequency Adjusted for Changes in Industry Mix
AL	-24.5%	-22.9%	-22.8%
AZ	-17.7%	-11.3%	-12.6%
AR	-21.4%	-23.3%	-20.8%
CO	-12.2%	-13.2%	-10.4%
CT	-16.6%	-11.1%	-13.0%
DC	-18.9%	-16.3%	-15.2%
FL	-27.0%	-24.5%	-24.7%
GA	-19.4%	-12.3%	-13.6%
ID	-16.2%	-15.8%	-15.4%
IL	-15.5%	-10.6%	-5.7%
IN	-23.0%	-19.3%	-19.2%
IA	-11.2%	-8.9%	-9.4%
KS	-11.0%	-9.4%	-9.6%
KY	-16.1%	-18.8%	-8.3%
LA	-18.6%	-26.2%	-17.9%
ME	-13.8%	-11.0%	-12.5%
MD	-19.5%	-18.4%	-16.1%
MS	-21.7%	-22.1%	-10.9%
MO	-28.5%	-25.0%	-24.2%
MT	-13.1%	-10.5%	-11.6%
NE	-12.2%	-8.7%	-7.9%
NV	-21.1%	-19.4%	-18.8%
NH	-24.0%	-16.9%	-18.7%
NM	-9.2%	-8.9%	-7.6%
NC	-18.4%	-12.6%	-13.1%
OK	-11.1%	-14.5%	-9.0%
OR	-19.1%	-12.2%	-12.6%
RI	-21.7%	-15.9%	-18.6%
SC	-19.0%	-12.1%	-14.4%
SD	-8.9%	-8.0%	-5.4%
TN	-19.0%	-14.0%	-14.4%
TX	-25.6%	-27.4%	-22.7%
UT	-25.1%	-27.4%	-24.4%
VT	-22.9%	-19.8%	-21.2%
VA	-25.4%	-18.8%	-19.0%
HI	-26.9%	-28.5%	-26.1%
AK	-25.0%	-19.3%	-17.1%
Total	-20.5%	-18.3%	-16.2%

Exhibit 16: Frequency Changes by State From PYE 2005 to PYE 2009

Average Weekly Hours

In this section, we will examine how another factor, average hours worked per week, can have an impact on certain frequency measures. A simple example will illustrate. Suppose from one year to the next the number of employees remains constant, but average weekly hours (AWH) increases. Further, suppose that this increase in exposure generates a proportional increase in the number of claims. It follows that a measure of frequency per worker would show an increase. However, an alternative measure, frequency per worker hour, would indicate no change in frequency (ignoring the possible impact of worker fatigue).

During the five years preceding 2007, average weekly hours remained relatively stable. However, due to the recent recession, AWH was more volatile over the period 2007 through 2010.

Exhibit 17 displays AWH by state for Calendar Years 2007 through 2010.⁷ In most states, the average number of hours worked per week declined from 2007 through 2009, but increased from 2009 through 2010.

⁷ Source: US Bureau of Labor Statistics, Current Employment Statistics (CES)

State	Average Weekly Hours			
	2007	2008	2009	2010
Alabama	36.6	36.0	34.9	35.1
Alaska	35.5	35.3	35.0	35.3
Arizona	35.2	34.8	34.8	35.2
Arkansas	35.0	35.2	34.6	34.9
California	34.5	34.2	33.8	34.0
Colorado	34.9	34.8	34.3	34.3
Connecticut	34.3	34.0	33.0	33.3
Delaware	34.3	33.8	32.7	32.5
District of Columbia	36.3	35.8	36.3	35.2
Florida	35.4	35.2	35.0	35.4
Georgia	35.6	35.3	34.6	34.7
Hawaii	32.6	32.6	32.5	32.8
Idaho	34.3	33.9	33.6	33.5
Illinois	34.4	34.3	34.4	34.4
Indiana	35.5	35.0	34.6	35.1
Iowa	34.2	33.8	33.4	34.1
Kansas	34.7	34.8	34.2	34.1
Kentucky	36.8	36.2	35.4	35.3
Louisiana	35.8	36.5	36.1	36.5
Maine	34.2	34.3	33.3	33.8
Maryland	34.8	34.7	34.5	34.1
Massachusetts	33.5	33.7	33.6	33.6
Michigan	34.9	34.2	33.3	33.7
Minnesota	33.8	33.5	32.6	33.0
Mississippi	35.7	35.6	35.4	35.9
Missouri	34.4	34.5	33.9	33.9
Montana	35.6	32.3	31.2	32.6
Nebraska	33.5	33.7	33.7	34.1
Nevada	37.3	37.0	35.9	34.5
New Hampshire	33.3	32.8	32.7	33.1
New Jersey	34.0	33.6	33.6	33.8
New Mexico	34.6	35.4	35.1	35.0
New York	34.1	34.1	33.8	33.9
North Carolina	34.8	34.3	33.8	34.1
North Dakota	33.0	32.4	32.0	32.7
Ohio	33.9	33.9	33.0	33.5
Oklahoma	35.0	35.5	35.1	35.6
Oregon	34.2	33.8	33.2	33.6
Pennsylvania	33.8	33.7	33.0	33.3
Rhode Island	33.5	34.1	33.9	33.9
South Carolina	36.0	35.6	34.7	34.8
South Dakota	33.0	32.9	33.3	33.9
Tennessee	35.3	35.2	35.2	35.3
Texas	36.5	36.3	35.3	35.9
Utah	34.9	34.6	35.8	35.5
Vermont	34.1	34.4	34.1	34.2
Virginia	35.2	35.0	34.6	35.4
Washington	35.3	34.6	34.4	34.2
West Virginia	35.2	35.2	34.4	34.9
Wisconsin	32.9	33.0	32.2	32.8
Wyoming	36.2	36.7	35.6	35.9

Exhibit 17: Average Weekly Hours by State

Exhibit 18 displays the change in frequency in NCCI states from PYE 2008 to PYE 2009 along with some related statistics.

- Column 10 displays the change in frequency per wage-adjusted payroll of -8.4% that was presented in Exhibit 12. This is equivalent to the change in frequency per worker⁸ in Column 11.
- An alternative measure, frequency per worker-hour, is generally not distorted by changes in AWH. This is because both numerator and denominator are directly correlated with changes in AWH. An exception is that frequency per worker-hour may increase if AWH reaches very high levels. For example, increased overtime could lead to worker fatigue and, in turn, a higher probability of an accident. Column 12 displays the change in frequency per worker-hour of -7.6%, which is slightly higher than the change in frequency per worker. This can also be derived as the change in frequency per worker divided by the change in AWH: $(1 - .084) / (1 - .009) - 1 = -.076$ (i.e., -7.6%)
- The decrease in AWH of -0.9% placed downward pressure on the number of claims without impacting the number of workers. Hence, the change in frequency per worker in PYE 2009 is slightly less than the change in frequency per worker-hour.
- Given the modest change in AWH from PYE 2008 to PYE 2009, the change in frequency per worker is relatively close to the change in frequency per worker-hour. 6

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
PYE	Workers	Avg Weekly Hours	Total Hours	Avg Hrly Wage	Avg Wkly Wage	Payroll	Wage Adjusted Payroll	Lost Time Claims	Freq per \$1M WA Payroll	Freq per 100k Workers	Freq per 1M Hours
			(2)x(3)x52		(3)x(5)	(4)x(5)					
2008	49.5 M	35.12	90.5 B	\$22.84	\$801.97	2,066.2 B	2,092.1 B	471,035	0.225	950.7	5.2
2009	48.5 M	34.81	87.8 B	\$23.33	\$812.03	2,046.3 B	2,046.3 B	422,193	0.206	871.2	4.8
Change	-2.2%	-0.9%	-3.0%	2.1%	1.3%	-1.0%	-2.2%	-10.4%	-8.4%	-8.4%	-7.6%

Exhibit 18: Countrywide Changes in Frequency per Worker and per Worker-Hour

⁸ Number of workers was derived as summation by state of payroll divided by state average weekly wage (from the Quarterly Census of Employment and Wages) times 52

FREQUENCY CHANGES BY CLAIM CHARACTERISTICS AND BY EMPLOYER CHARACTERISTICS

For this analysis we used the **Statistical Plan for Workers Compensation and Employers Liability Insurance** data. **Statistical Plan** data allows us to breakdown the claim frequency results in greater detail.

For this historical analysis, unless otherwise noted, frequency is defined as reported lost-time claims as of 1st report⁹ per \$1 million in wage-adjusted payroll. While it is not uncommon for claims to be reported subsequent to 1st report, this paper is confined to changes in frequency observed at 1st report. The overall frequency decline was 20.5% from PYE 2005 to PYE 2009. The charts that follow examine the change in frequency by various claim characteristics as well as by various employer characteristics.

Claim Frequency by Size of Loss

Exhibit 19 displays changes in lost-time claim frequency by Size of Loss. Each claim cost represents undeveloped paid losses plus case reserves as of 1st report. For this initial snapshot, we did not account for medical or wage inflation. Hence, a migration of claims over time from the low to high ranges distorts the results. For example, a \$49,000 claim in 2005 would fall in the \$10K to \$50K range. A comparable claim in 2009 would likely cost more than \$50,000, just due to inflation, and would, therefore, appear in the next higher size of loss range (\$50K to \$250K). Thus, Exhibit 19 is presented only for comparison with Exhibit 20, in which we adjust all claims to current inflation level.

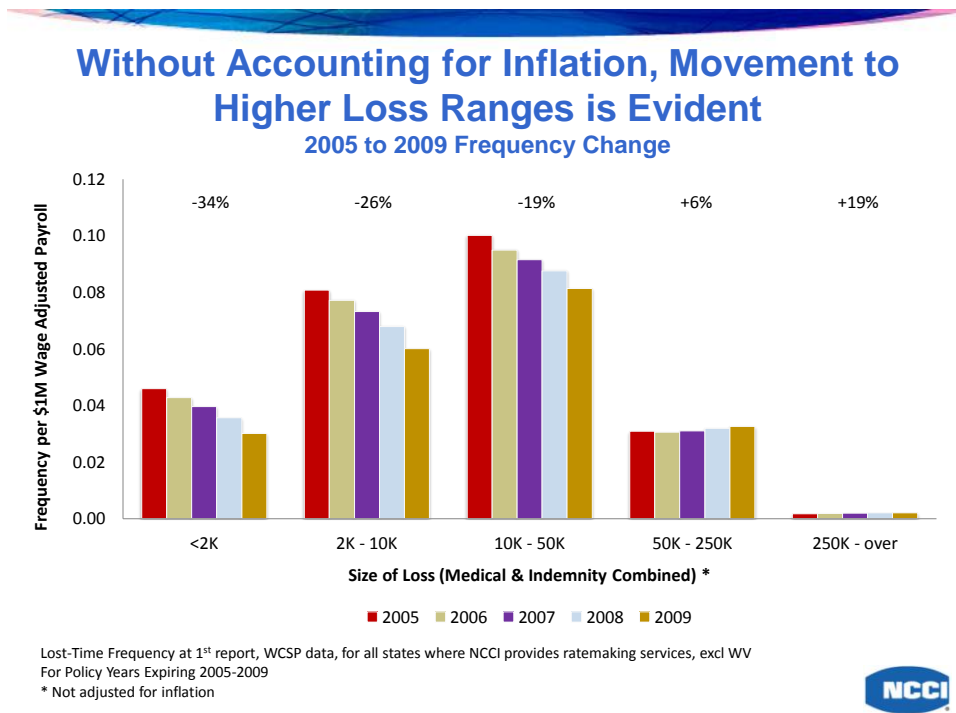


Exhibit 19: Claim Frequency by Size of Loss

⁹ 1st report is 18 months after policy effective date for **Statistical Plan** data

Claim Frequency by Size of Loss After Adjusting for Inflation

As shown in Exhibit 20, after accounting for wage and medical cost inflation, claims below \$50,000 exhibited a greater rate of decline than those above \$50,000.

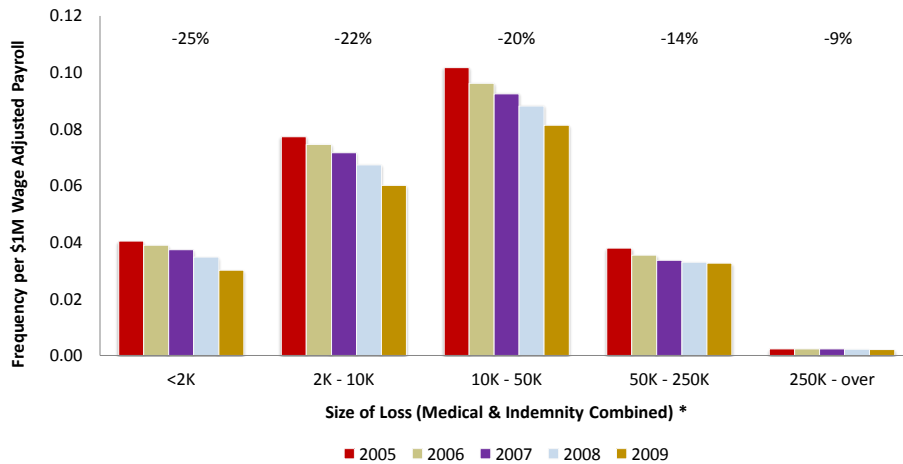
For this snapshot, claims in PYE 2005 through PYE 2008 were adjusted to the 2009 inflation level. Specifically, the indemnity portion of each claim was adjusted for changes in countrywide average wages using Quarterly Census of Employment and Wages data. The medical portion of each claim was adjusted using the countrywide Medical CPI.¹⁰ Note that we did not adjust for changes in utilization, which would include the following:

- Changes in the number of treatments per claim
- Changes in the types of treatments per claim
- Changes in the claim diagnoses

We also did not account for other possible contributing factors, such as changes in industry mix.

After Adjusting for Inflation, the Higher Size Ranges Exhibit Successively Smaller Declines

2005 to 2009 Frequency Change



Lost-Time Frequency at 1st report, WCSP data, for all states where NCCI provides ratemaking services, excl WV
 For Policy Years Expiring 2005-2009
 * Adjusted for Wage and Medical inflation



Exhibit 20: Claim Frequency by Size of Loss Adjusted for Inflation

¹⁰ Source of Quarterly Census of Employment and Wages data and Medical CPI is the Bureau of Labor Statistics

Claim Frequency by Part of Body

Exhibit 21 displays changes in lost-time frequency by Part of Body. Injuries involving the lower back and multiple body parts exhibited steep frequency declines over the latest five years, but continue to represent a relatively large share of injuries (as indicated by the heights of the bars).

Note: For this and a number of subsequent exhibits, the Appendix provides the distribution of claim counts and the distribution of losses (reported paid losses plus case reserve amounts) for each grouping. In addition, the Appendix provides a detailed description of the elements contained in each grouping.

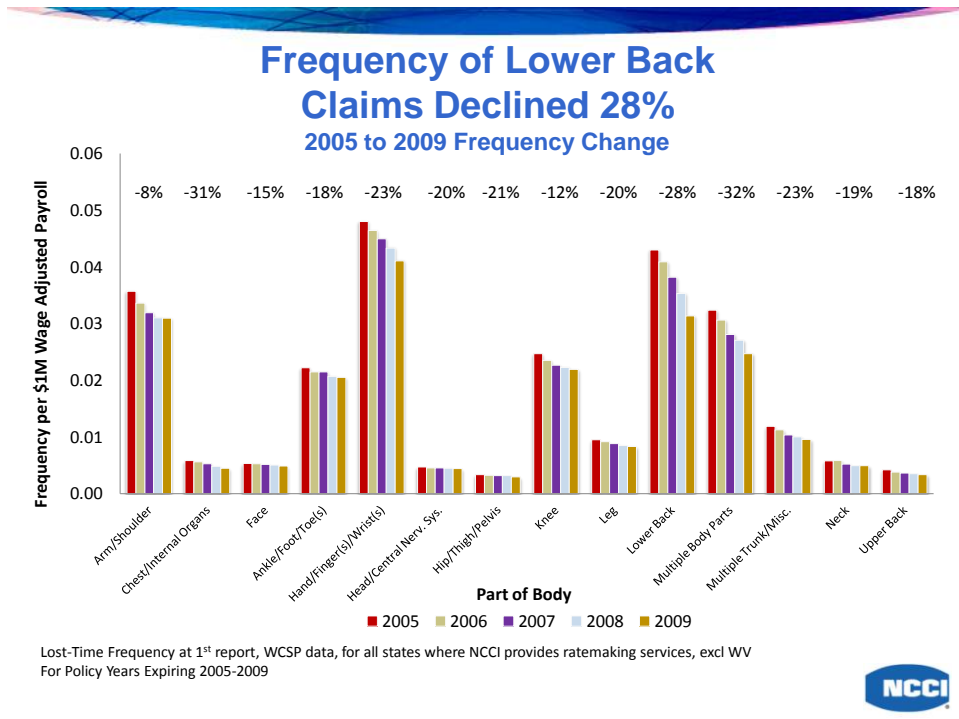
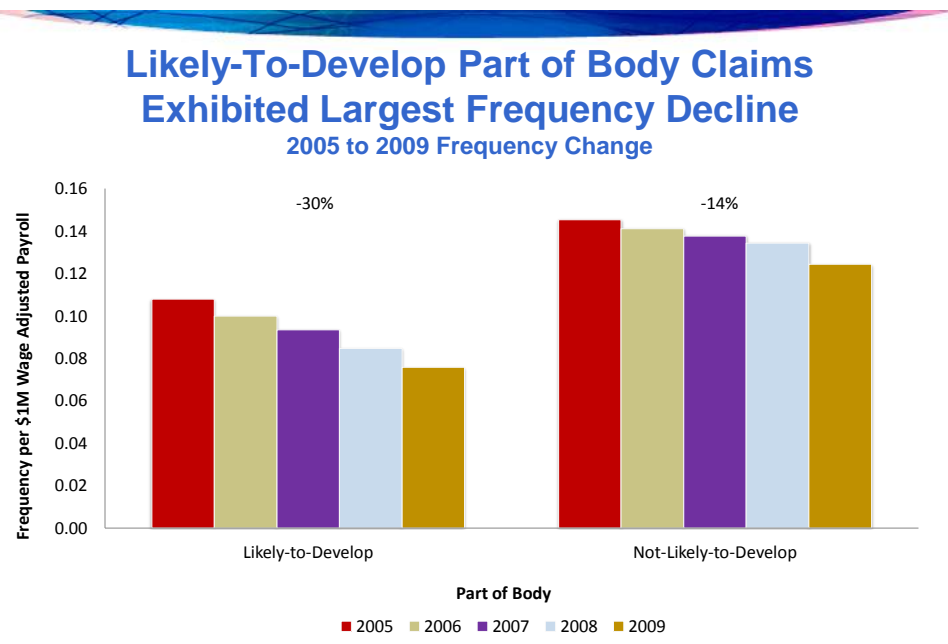


Exhibit 21: Claim Frequency by Part of Body

Claim Frequency by Likely-to-Develop and Not-Likely-to-Develop Parts of Body

In Exhibit 22, we have assigned all lost-time claims into one of two categories (Likely-to-Develop and Not-Likely-to-Develop) based on Part of Body. Under NCCI's new class ratemaking methodology, Part of Body is one of three claim characteristics (along with injury type and open vs. closed status) used to create homogeneous claim groupings for loss development purposes.¹¹

Likely-to-Develop claim frequency had the sharper percentage decline. NCCI identifies Likely-to-Develop claims as those with body parts such as head, skull, neck, trunk, spinal cord, upper and lower back or multiple body parts. Not-Likely-to-Develop claims include those involving fingers, hand, arm, wrist, toes, foot, and ankle. The Appendix contains the complete list of Parts of Body in each category.



Lost-Time Frequency at 1st report, WCSP data, for all states where NCCI provides ratemaking services, excl WV For Policy Years Expiring 2005-2009



Exhibit 22: Claim Frequency by “Likely” vs. “Not-Likely” to Develop Groupings

¹¹ Refer to the report, *Class Ratemaking for Workers Compensation: NCCI's New Methodology*, by Tom Daley, available on ncci.com

Claim Frequency by Nature of Injury

Exhibit 23 displays changes in lost-time frequency by Nature of Injury (NOI). As might be expected, Sprain/Strain claims show a significant decline but still constitute a large share of claims. Also notable is the continued decline in Carpal Tunnel Syndrome (CTS) claim frequency of 47%. CTS claims involve injuries to the hand, wrist, or both. For more discussion on the decline in CTS claim frequency, see the September 2010 NCCI research brief on frequency.¹²

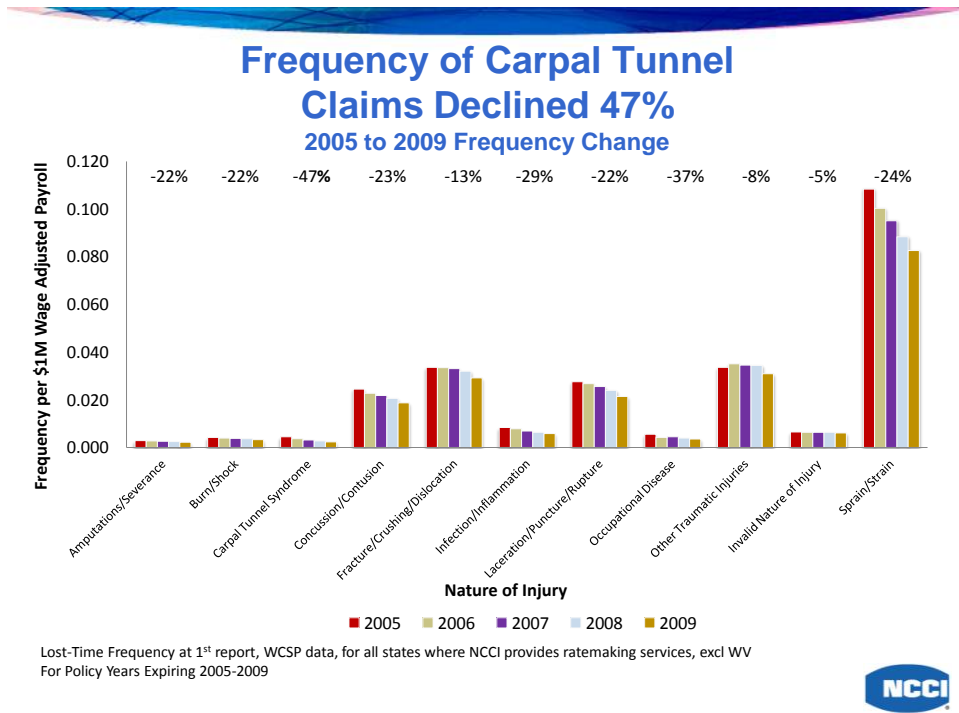


Exhibit 23: Claim Frequency by Nature of Injury

¹² Refer to the report, *Workers Compensation Claim Frequency Continues to Decline in 2009*, by Jim Davis and Matt Crotts, available on ncci.com

Claim Frequency by Cause of Injury

Exhibit 24 compares changes in lost-time frequency by Cause of Injury (COI). The frequency of claims in the Cumulative Injury category declined sharply, by 45% over the latest five-year period. The frequency of claims categorized under Miscellaneous Causes declined by 44%. This category includes injuries such as foreign matter in eyes and absorption, ingestion, and inhalation. The Striking Against/Stepping On category experienced a 36% decrease. A possible explanation is that the types of injuries in these two categories may be relatively more preventable through loss control and safety measures.

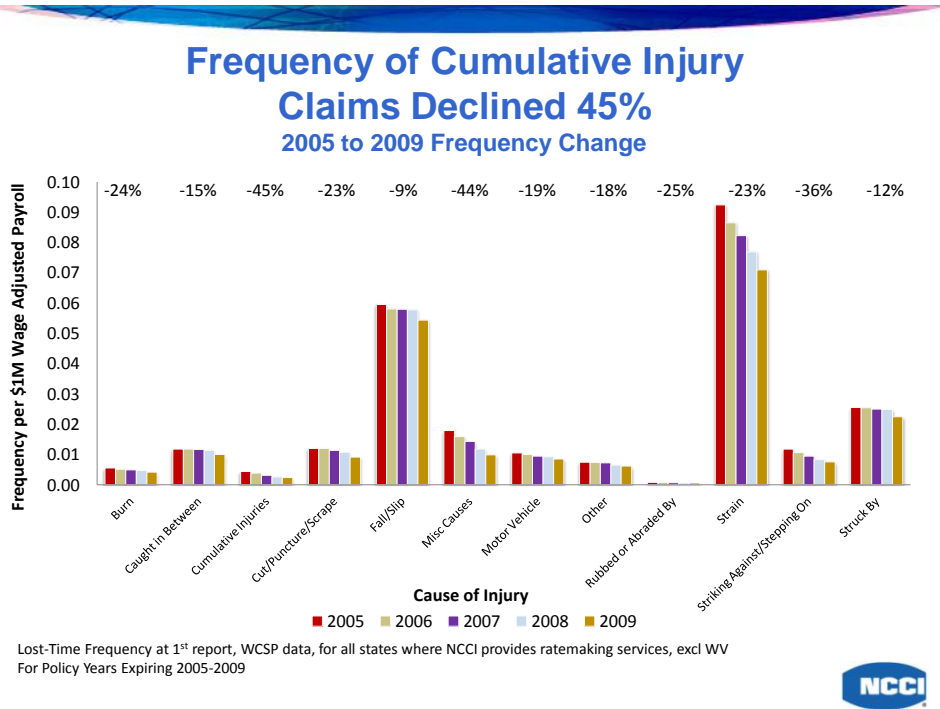


Exhibit 24: Claim Frequency by Cause of Injury

Claim Frequency by Injury Type

Exhibit 25 displays changes in frequency by Injury Type over the latest five years. Overall lost-time claim frequency declined by 21%. It is not uncommon for claims to be reclassified under different injury types as they mature. For example, a claim reported as temporary total disability at 1st report may develop adversely into a permanent partial disability claim as of a subsequent report. This exhibit is based on the Injury Type reported as of 1st report.

Fatal and permanent total claims tend to exhibit more year-to-year volatility than other injury types, likely due to the much smaller volume of these claims. The decline in frequency for claims involving fatalities and permanent total disability has been less than the decline for all lost-time claims. This is consistent with the finding in Exhibit 20 that claims above \$50,000 declined at a lesser rate than those below \$50,000.

Temporary total disability claim frequency declined more than permanent partial disability claim frequency. However, this is not inconsistent with the finding in Exhibit 22 that “Likely-to-Develop” claim frequency declined by more than “Not-Likely-to-Develop” claims. This is due to the fact that as of 1st report, the majority of claims with Likely-to-Develop body parts are still classified as temporary total disability.

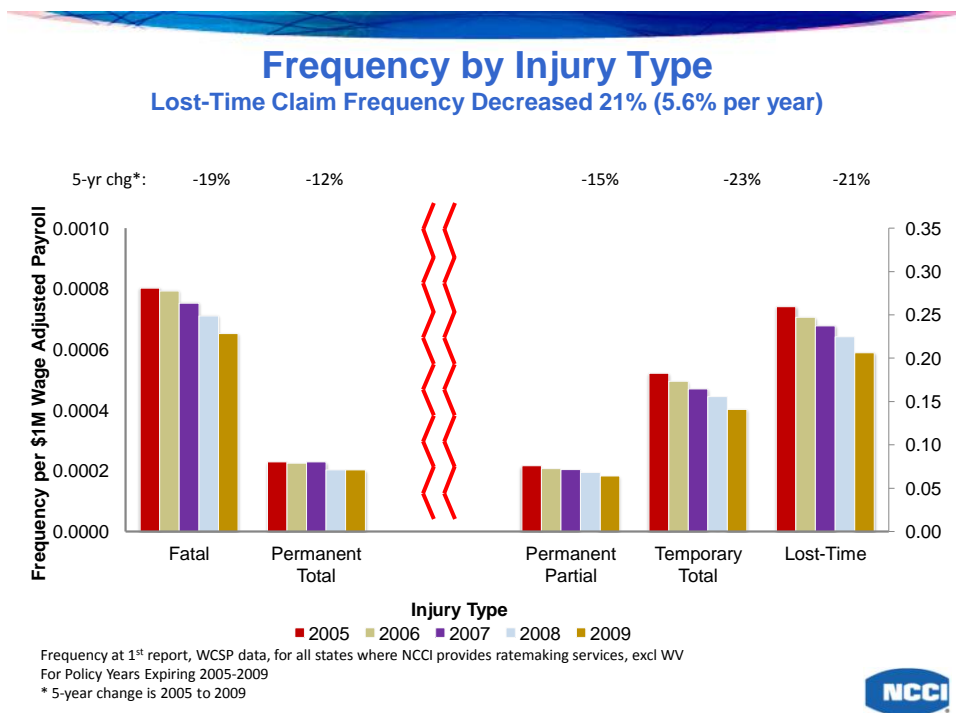


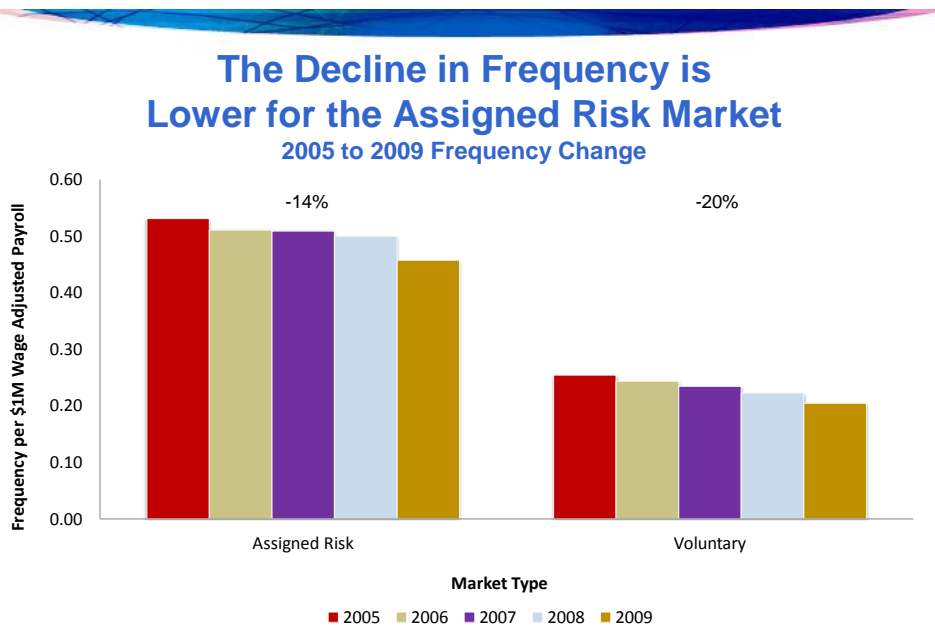
Exhibit 25: Claim Frequency by Injury Type

In addition to analyzing frequency by claim characteristics (above), this year’s frequency update also includes an analysis of the various categories listed below:

- By Market Type (Assigned Risk vs. Voluntary)
- By Region
- By State
- By Industry Group
- By Largest Classes Within Each Industry Group
- By Size of Employer Payroll
- By Size of Employer Premium
- By Size of Employer Average Rate

Changes in Claim Frequency by Market Type

Exhibit 26 shows that from 2005 to 2009, both the assigned risk and voluntary markets enjoyed a decline in frequency, with the assigned risk market experiencing a smaller percentage decline. In compiling this exhibit, policies were assigned to the appropriate market type by year. During the period displayed, the assigned risk markets were generally depopulating. With all else being equal, a shift of employers with relatively lower frequency from the assigned risk market into the voluntary market could slow the decline in frequency in both markets. This would explain why the overall change in lost-time frequency of 21% does not fall in between the changes for the assigned risk and voluntary markets.



Lost-Time Frequency at 1st report, WCSP data, for all states where NCCI provides ratemaking services, excl WV For Policy Years Expiring 2005-2009



Exhibit 26: Claim Frequency by Market Type

Changes in Claim Frequency by Geographic Region

Exhibit 27 examines changes in frequency by geographic region over the latest 5- and 10-year periods. The changes are very similar with the Western Region showing a relatively smaller decline than the other regions.

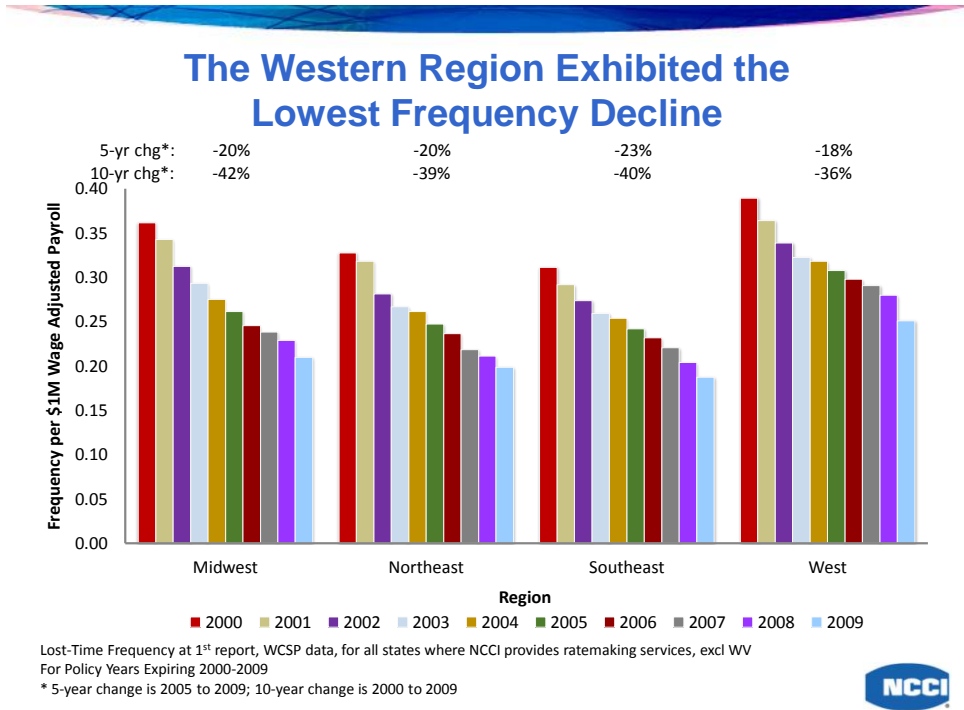


Exhibit 27: Claim Frequency by Geographic Region

Changes in Claim Frequency by State

Exhibit 28 displays annual frequency changes by state for the latest five-year period (PYE 2005 to PYE 2009). Independent bureau states and monopolistic state fund states, for which data is not included in this report, are displayed in white.

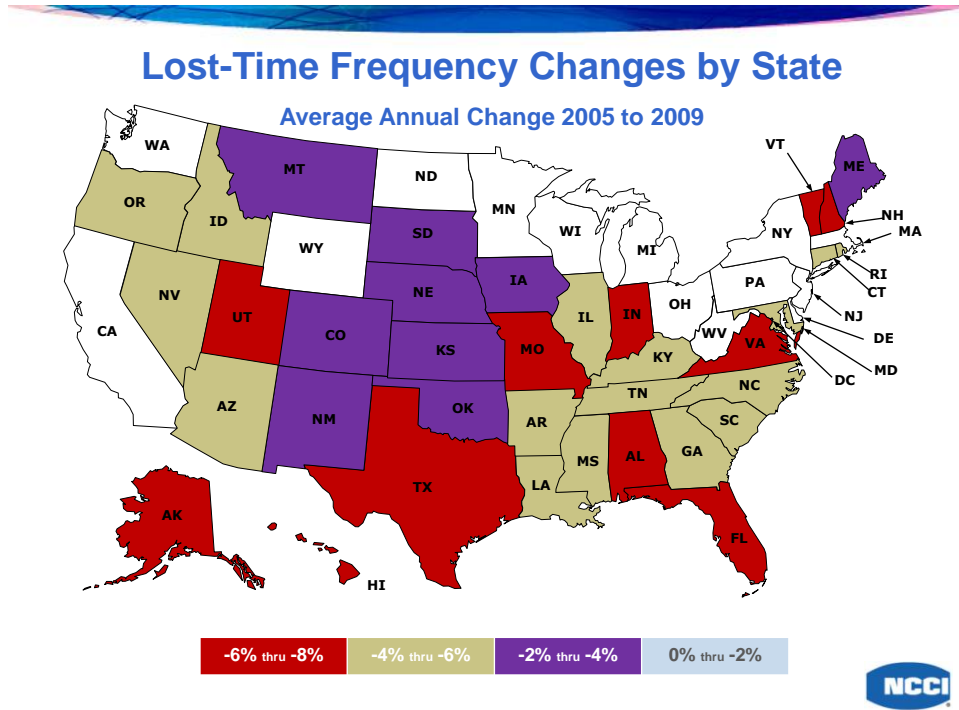


Exhibit 28: Annual Claim Frequency by State—Latest Five Years

Exhibit 29 displays annual frequency changes by state for the latest 10-year period (PYE 2000 to PYE 2009). Over the latest 10 years, the majority of states had an average annual change in frequency in the -2% to -8% range.

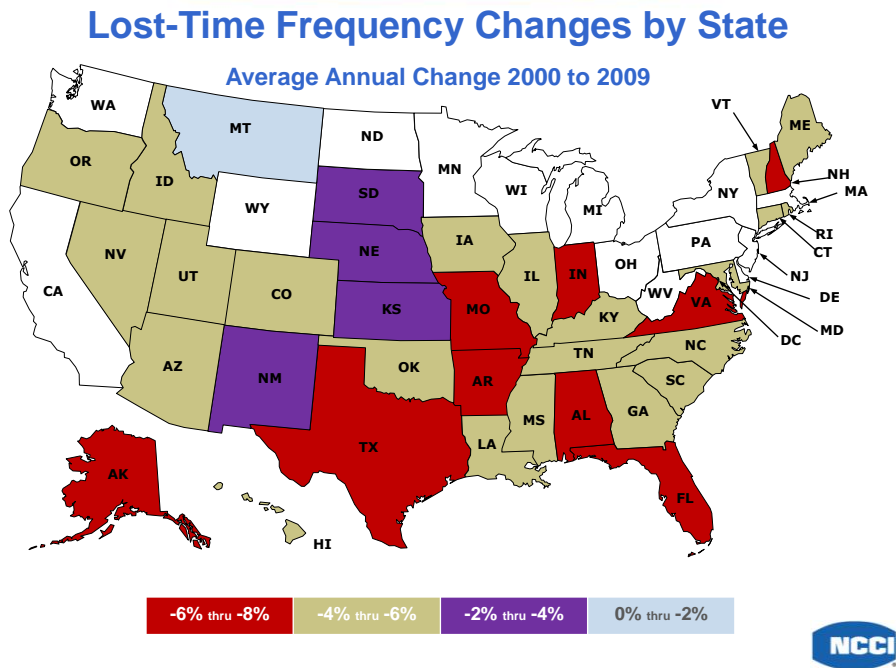


Exhibit 29: Annual Claim Frequency by State—Latest 10 Years

Changes in Claim Frequency by Largest Classes Within Each Industry Group

Below are the changes in frequency by industry group from PYE 2005 through PYE 2009 (see also Exhibit 13):

Manufacturing	-21.9%
Contracting	-26.3%
Office & Clerical	-23.6%
Goods & Services	-14.2%
Miscellaneous	-12.7%
Total	-20.5%

Exhibit 30 displays the changes in frequency for the three largest classes within each industry group. The Clerical Office class (Code 8810) is driving the decline in the broader Office & Clerical industry group. This class, which represents over 50% of the payroll in its industry group, experienced a 30% decline in frequency.

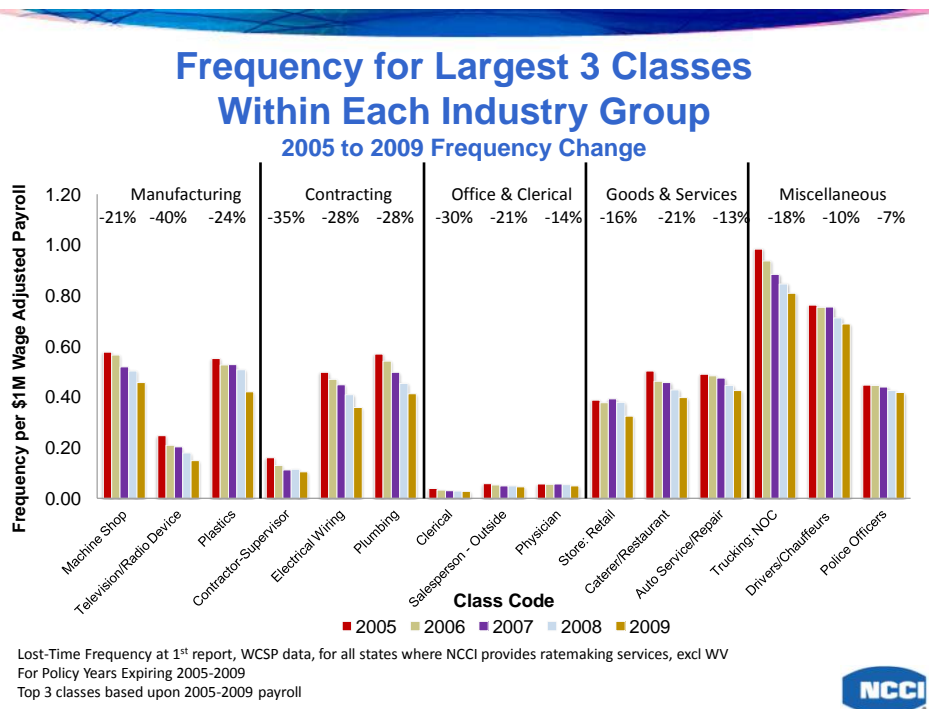


Exhibit 30: Claim Frequency by Largest Classes Within Each Industry Group

Changes in Claim Frequency by Employer Characteristics

In Exhibits 31–33, we have grouped employers by size of payroll, size of premium, and size of average rate, respectively. Note that the assignments to each size range are performed separately for each year. Thus, it is possible for employers to change size range from one year to the next.

Changes in Claim Frequency by Size of Employer Payroll

Exhibit 31 reveals that changes in frequency over the latest five years were very consistent for employers with less than \$100 million in payroll. Those with over \$100 million in payroll enjoyed a larger decline in frequency. Larger employers might be better equipped to implement loss control and safety programs than smaller employers.

In constructing this exhibit, each employer’s payroll by state was adjusted to the PYE 2009 wage level. Employers were then assigned to the appropriate size range based on their wage-adjusted payroll.

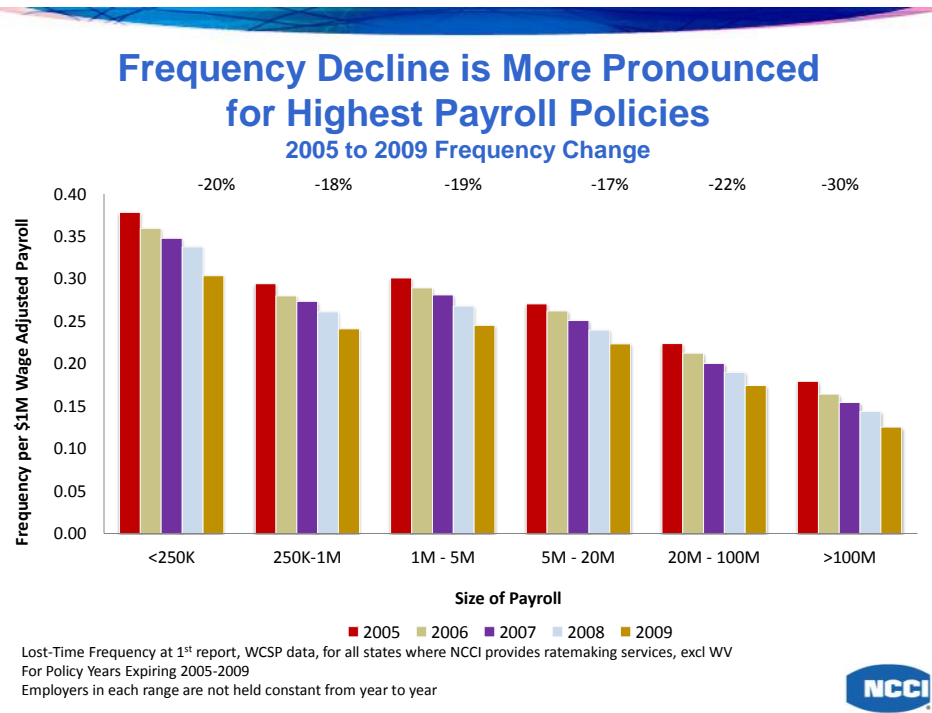


Exhibit 31: Claim Frequency by Size of Employer Payroll

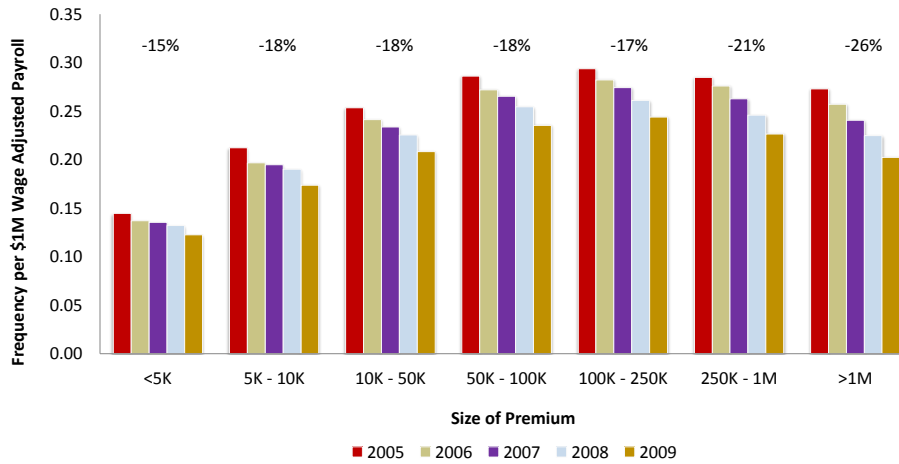
Changes in Claim Frequency by Size of Employer Premium

Exhibit 32 indicates that changes in frequency over the latest five years were fairly consistent for employers with less than \$1 million in premium. Those employers with greater than \$1 million in premium experienced the largest decline in frequency.

In compiling this exhibit, each employer's premium by state was adjusted or restated based on wage changes through 2008. Employers were then assigned to the appropriate size range based on their wage-adjusted premium.

Frequency Decline is Fairly Consistent for Policies With Less Than \$1M in Premium

2005 to 2009 Frequency Change



Lost-Time Frequency at 1st report, WCSP data, for all states where NCCI provides ratemaking services, excl WV
 For Policy Years Expiring 2005-2009
 Employers in each range are not held constant from year to year



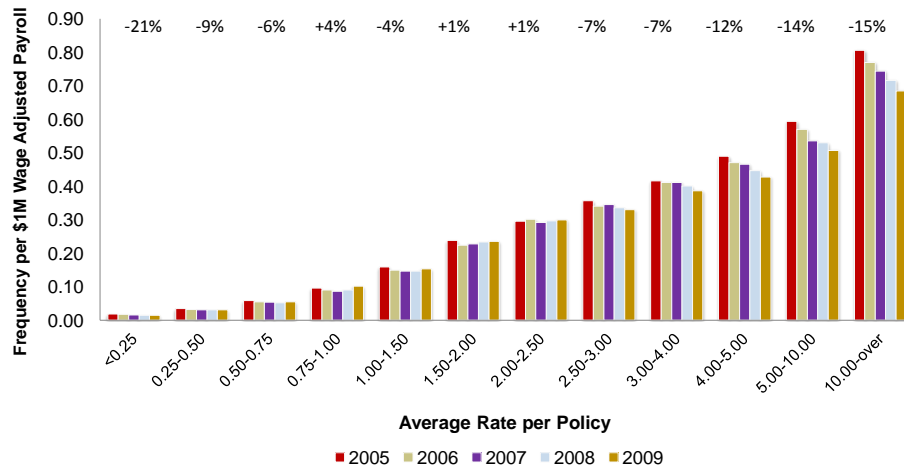
Exhibit 32: Claim Frequency by Size of Employer Premium

Changes in Claim Frequency by Size of Employer Average Rate

Exhibit 33 reveals that employers with average rates below \$0.25 experienced the largest declines in frequency. This is consistent with the earlier observation that the Office & Clerical industry group experienced a relatively larger-than-average decline in frequency. Note that the average rate for each employer was calculated as a payroll-weighted average of all classification rates on the policy.

In comparing Exhibits 31–33, it is important to recognize that the mix of classes represented from the low to high ranges can be quite different. For example, a contractor might have low payroll along with a relatively high rate, whereas the reverse may be true for an office employer.

Employers With the Lowest Average Rate Experienced the Largest Frequency Decline 2005 to 2009 Frequency Change



Lost-Time Frequency at 1st report, WCSP data, for all states where NCCI provides ratemaking services, excl WV
For Policy Years Expiring 2005-2009
Employers in each range are not held constant from year to year



Exhibit 33: Claim Frequency by Size of Employer Average Rate

Comparison to Bureau of Labor Statistics

Whenever possible, NCCI examines external data sources to ensure consistency with its findings. We reviewed Bureau of Labor Statistics (BLS) data from the United States Department of Labor.¹³ The BLS defines frequency as nonfatal, occupational injuries and illnesses involving days away from work per 10,000 full-time workers. The chart below displays BLS changes in frequency for the United States for selected categories during the calendar period 2005 to 2009. The changes are very consistent with those observed in NCCI data over a similar period.

Total Private Sector	-21.6%
Construction Industry	-34.1%
Lower Back (Lumbar) Injuries	-27.4%
Carpal Tunnel Syndrome Injuries	-44.4%

Factors Influencing the Long-Term Decline in Frequency

As noted above, it remains to be seen whether the 2010 uptick in frequency represents the start of a new pattern or a temporary blip in the long-term decline in frequency.

As previously reported, NCCI believes that several factors may have contributed to the decline in frequency since the early 1990s, including the following:

- Global competition has fostered advances in automation, technology, and production, such as the following:
 - Increased use of robotics
 - Increased use of modular design and construction techniques
 - Increased use of power-assisted processes
 - Advances in ergonomic designs
 - Proliferation of cordless tools
- The aging of the workplace has put downward pressure on claim frequency because older workers tend to have fewer workplace accidents
- Emphasis on workplace safety and loss control has continued

¹³ Source: US Bureau of Labor Statistics, Occupational Injuries and Illnesses

APPENDIX

Proof that Mix-Adjusted Change in Frequency per Payroll Equals the Mix-Adjusted Change in Frequency per On-Levelled Premium

A. Mix-Adjusted Freq to Payroll Change

$$\left(\frac{\sum \text{Claims 2009} \cdot \text{Payroll 2008}}{\text{Payroll 2009}} \right) / \left\{ \frac{\sum \text{Claims 2008}}{\sum \text{Payroll 2008}} \right\}$$

B. Mix-Adjusted Freq to Premium Change

$$\left(\frac{\sum \text{Claims 2009} \cdot \text{Premium 2008}}{\text{Premium 2009}} \right) / \left\{ \frac{\sum \text{Claims 2008}}{\sum \text{Premium 2008}} \right\}$$

C. The Mix-Adjusted 2009 Claims are the same under (A) and (B), because the rates (on-leveled to 2009) cancel by Class and State

$$\left(\frac{\sum \text{Claims 2009} \cdot \text{Premium 2008}}{\text{Premium 2009}} \right) = \left(\frac{\sum \text{Claims 2009} \cdot \text{Payroll 2008} \cdot \text{Rate 09}}{\text{Payroll 2009} \cdot \text{Rate 09}} \right) = \left(\frac{\sum \text{Claims 2009} \cdot \text{Payroll 2008}}{\text{Payroll 2009}} \right)$$

Distribution of Lost-Time Claim Counts and Reported Loss Amounts

The following charts provide the underlying loss distributions for selected categories of data provided in this report. Each chart provides a distribution of lost-time claim counts and loss amounts (medical and indemnity combined). For each distribution, we utilized *Statistical Plan for Workers Compensation and Employers Liability Insurance* data for the latest five years combined to add stability. The data is undeveloped as of 1st report. Thus, the distributions are likely to change as claim counts and loss dollars develop to an ultimate level.

The following claim counts and loss distributions can be used to estimate the impact that the change in frequency for a given claim type had on the entire workers compensation market.

DATA CORRESPONDING TO EXHIBIT 13

Industry Group	PYE 2005–2009	
	<u>Distribution of Lost-Time Claims</u>	
	Claim Counts	Loss Amounts
Manufacturing	18.1%	17.3%
Contracting	18.0%	26.3%
Office & Clerical	11.8%	11.0%
Goods & Services	37.3%	29.4%
Miscellaneous	14.7%	16.0%
Grand Total	100.0%	100.0%

Data Corresponding to Exhibit 21

Part of Body	PYE 2005–2009	
	<u>Distribution of Lost-Time Claims</u>	
	Claim Counts	Loss Amounts
Ankle/Foot/Toe(s)	9.0%	5.9%
Arm/Shoulder	13.9%	15.6%
Chest/Internal Organs	2.1%	1.7%
Face	2.2%	1.6%
Hand/Finger(s)/Wrist(s)	18.6%	11.8%
Head/Central Nervous System	1.9%	4.1%
Hip/Thigh/Pelvis	1.3%	1.9%
Invalid Body Part	2.7%	2.3%
Knee	9.8%	8.6%
Leg	3.7%	4.8%
Lower Back	15.3%	14.4%
Multiple Body Parts	11.4%	18.0%
Multiple Trunk/Miscellaneous	4.4%	4.2%
Neck	2.2%	3.6%
Upper Back	1.5%	1.4%
Grand Total	100.0%	100.0%

Data Corresponding to Exhibit 22

Part of Body Group	PYE 2005–2009	
	<u>Distribution of Lost-Time Claims</u>	
	Claim Counts	Loss Amounts
Likely-to-Develop	39.2%	50.4%
Not-Likely-to-Develop	58.1%	47.3%
POB Not Reported	2.7%	2.3%
Grand Total	100.0%	100.0%

Data Corresponding to Exhibit 23

Nature of Injury	PYE 2005–2009	
	<u>Distribution of Lost-Time Claims</u>	
	Claim Counts	Loss Amounts
Amputations/Severance	1.1%	2.1%
Burn/Shock	1.6%	2.3%
Carpal Tunnel Syndrome	1.4%	1.2%
Concussion/Contusion	9.2%	7.7%
Fracture/Crushing/Dislocation	13.7%	19.8%
Infection/Inflammation	3.0%	2.4%
Invalid Nature of Injury	2.7%	2.3%
Laceration/Puncture/Rupture	10.7%	7.9%
Occupational Disease/Cumulative Injuries	1.8%	1.7%
Other Traumatic Injuries	14.4%	18.5%
Sprain/Strain	40.4%	34.1%
Grand Total	100.0%	100.0%

Data Corresponding to Exhibit 24

Cause of Injury	PYE 2005–2009	
	<u>Distribution of Lost-Time Claims</u>	
	Claim Counts	Loss Amounts
Burn	2.1%	2.5%
Caught in Between	4.8%	4.8%
Cumulative Injuries	1.4%	1.2%
Cut/Puncture/Scrape	4.7%	2.8%
Fall/Slip	24.5%	28.9%
Misc Causes	5.9%	5.1%
Motor Vehicle	4.1%	8.1%
Other	2.9%	2.5%
Rubbed or Abraded By	0.3%	0.2%
Strain	34.8%	30.0%
Striking Against/Stepping On	4.0%	3.0%
Struck By	10.5%	11.0%
Grand Total	100.0%	100.0%

Data Corresponding to Exhibit 31

Size of Payroll	PYE 2005–2009	
	<u>Distribution of Lost-Time Claims</u>	
	Claim Counts	Loss Amounts
≤250K	10.1%	13.1%
>250K to ≤1M	13.6%	15.4%
>1M to ≤5M	24.2%	25.0%
>5M to ≤20M	21.8%	20.3%
>20M to ≤100M	17.7%	15.6%
>100M	12.6%	10.5%
Grand Total	100.0%	100.0%

Data Corresponding to Exhibit 32

Size of Premium	PYE 2005–2009	
	<u>Distribution of Lost-Time Claims</u>	
	Claim Counts	Loss Amounts
≤5K	6.0%	7.2%
>5K to ≤10K	4.6%	5.2%
>10K to ≤50K	17.6%	19.1%
>50K to ≤100K	10.8%	10.9%
>100K to ≤250K	15.9%	15.5%
>250K to ≤1M	21.5%	20.4%
>1M	23.7%	21.7%
Grand Total	100.0%	100.0%

Data Corresponding to Exhibit 33

Average Rate on Policy	PYE 2005–2009 <u>Distribution of Lost-Time Claims</u>	
	Claim Counts	Loss Amounts
<0.25	0.4%	0.3%
>0.25 to ≤0.50	2.3%	2.2%
>0.50 to ≤0.75	2.6%	2.4%
>0.75 to ≤1.00	2.8%	2.4%
>1.00 to ≤1.50	6.6%	5.5%
>1.50 to ≤2.00	8.3%	6.8%
>2.00 to ≤2.50	9.5%	7.9%
>2.50 to ≤3.00	9.1%	7.7%
>3.00 to ≤4.00	15.0%	13.5%
>4.00 to ≤5.00	11.1%	10.5%
>5.00 to ≤10.00	23.6%	27.3%
>10.00	8.7%	13.4%
Grand Total	100.0%	100.0%

Detailed Description of the NCCI Groupings

The charts below provide a detailed description of the following groupings:

- Part of Body (POB)
- Likely-to-Develop vs. Not-Likely-to-Develop
- Nature of Injury (NOI)
- Cause of Injury (COI)
- Geographic Region

Exhibit 21—Claim Frequency by Part of Body

"Part of Body" Group	POB Code	"Part of Body" Description
Arm/Shoulder	30	Upper Extremities: Multiple Upper Extremities
	31	Upper Extremities: Upper Arm (Including: Clavicle and Scapula)
	32	Upper Extremities: Elbow
	33	Upper Extremities: Lower Arm
	38	Upper Extremities: Shoulder(s)
Chest/Internal Organs	44	Trunk: Chest (Including: Ribs, Sternum, and Soft Tissue)
	48	Trunk: Internal Organs
	49	Trunk: Heart
	60	Trunk: Lung
Face	13	Head: Ear(s)
	14	Head: Eye(s)
	15	Head: Nose
	16	Head: Teeth
	17	Head: Mouth
	18	Head: Other Facial Soft Tissue
	19	Head: Facial Bones
Ankle/Foot/Toe(s)	55	Lower Extremities: Ankle
	56	Lower Extremities: Foot
	57	Lower Extremities: Toe(s)
	58	Lower Extremities: Great Toe
Hand/Finger(s)/Wrist(s)	34	Upper Extremities: Wrist
	35	Upper Extremities: Hand
	36	Upper Extremities: Finger(s)
	37	Upper Extremities: Thumb
	39	Upper Extremities: Wrist(s) and Hand(s)

"Part of Body" Group	POB Code	"Part of Body" Description
Head/Central Nervous System	10	Head: Multiple Head Injury
	11	Head: Skull
	12	Head: Brain
Hip/Thigh/Pelvis	46	Trunk: Pelvis
	51	Lower Extremities: Hip
Knee	53	Lower Extremities: Knee
Leg	50	Lower Extremities: Multiple Lower Extremities
	52	Lower Extremities: Upper Leg
	54	Lower Extremities: Lower Leg
Lower Back	42	Trunk: Low Back Area (Including: Lumbar and Lumbo-Sacral)
Multiple Body Parts	64	Multiple Body Parts: Artificial Appliance (Braces, etc.)
	65	Multiple Body Parts: Insufficient Information/Unclassified
	66	Multiple Body Parts: No Physical Injury
	90	Multiple Body Parts: Multiple Body Parts
	91	Multiple Body Parts: Body System and Multiple Body System
Multiple Trunk/Miscellaneous	40	Trunk: Multiple Trunk
	61	Trunk: Abdomen Including Groin
	62	Trunk: Buttocks
	43	Trunk: Disc
	45	Trunk: Sacrum and Coccyx
	47	Trunk: Spinal Cord
Neck	63	Trunk: Lumbar and/or Sacral Vertebrae
	20	Neck: Multiple Injury
	21	Neck: Vertebrae
	22	Neck: Disc
	23	Neck: Spinal Cord
	24	Neck: Larynx
	25	Neck: Soft Tissue
26	Neck: Trachea	
Upper Back	41	Trunk: Upper Back Area (Thoracic Area)
Invalid Body Part	N/A	

Exhibit 22—Claim Frequency by "Likely" vs. "Not-Likely" to Develop Groupings

"Part of Body" Group	POB Code	"Part of Body" Description
Likely-to-Develop Group		
Head/Central Nervous System	10	Head: Multiple Head Injury
	11	Head: Skull
	12	Head: Brain
Lower Back	42	Trunk: Low Back Area (Including: Lumbar and Lumbo-Sacral)
Upper Back	41	Trunk: Upper Back Area (Thoracic Area)
Multiple Upper Extremities	30	Upper Extremities: Multiple Upper Extremities
Internal Organs (Heart, Lung, etc.)	48	Trunk: Internal Organs
	49	Trunk: Heart
	60	Trunk: Lung
Hip	51	Lower Extremities: Hip
Multiple Lower Extremities	50	Lower Extremities: Multiple Lower Extremities
Multiple Body Parts	65	Multiple Body Parts: Insufficient Information/Unclassified
	90	Multiple Body Parts: Multiple Body Parts
	91	Multiple Body Parts: Body System and Multiple Body System
Multiple Trunk/Miscellaneous	40	Trunk: Multiple Trunk
	62	Trunk: Buttocks
	43	Trunk: Disc
	45	Trunk: Sacrum and Coccyx
	47	Trunk: Spinal Cord
	63	Trunk: Lumbar and/or Sacral Vertebrae
Neck	20	Neck: Multiple Injury
	21	Neck: Vertebrae
	22	Neck: Disc
	23	Neck: Spinal Cord
	24	Neck: Larynx
	25	Neck: Soft Tissue

"Part of Body" Group	POB Code	"Part of Body" Description
Not-Likely-to-Develop Group		
Face	13	Head: Ear(s)
	14	Head: Eye(s)
	15	Head: Nose
	16	Head: Teeth
	17	Head: Mouth
	18	Head: Other Facial Soft Tissue
	19	Head: Facial Bones
Ankle/Foot/Toe(s)	55	Lower Extremities: Ankle
	56	Lower Extremities: Foot
	57	Lower Extremities: Toe(s)
	58	Lower Extremities: Great Toe
Hand/Finger(s)/Wrist(s)	34	Upper Extremities: Wrist
	35	Upper Extremities: Hand
	36	Upper Extremities: Finger(s)
	37	Upper Extremities: Thumb
	39	Upper Extremities: Wrist(s) and Hand(s)
Knee	53	Lower Extremities: Knee
Arm/Shoulder	31	Upper Extremities: Upper Arm (Including: Clavicle and Scapula)
	32	Upper Extremities: Elbow
	33	Upper Extremities: Lower Arm
	38	Upper Extremities: Shoulder(s)
Chest (Ribs, Sternum, etc)	44	Trunk: Chest (Including: Ribs, Sternum, and Soft Tissue)
Pelvis	46	Trunk: Pelvis
Leg	52	Lower Extremities: Upper Leg
	54	Lower Extremities: Lower Leg
Artificial Appliance/No Physical Injury	64	Multiple Body Parts: Artificial Appliance (Braces, etc.)
	66	Multiple Body Parts: No Physical Injury
Abdomen	61	Trunk: Abdomen Including Groin
Trachea	26	Neck: Trachea

Exhibit 23—Claim Frequency by Nature of Injury

"Nature of Injury" Group	NOI Code	"Nature of Injury" Description
Amputations/Severance	02	Amputation
	47	Severance
Burn/Shock	04	Burn
	19	Electric Shock
Carpal Tunnel Syndrome	78	Carpal Tunnel Syndrome
Concussion/Contusion	07	Concussion
	10	Contusion
Fracture/Crushing/Dislocation	13	Crushing
	16	Dislocation
	28	Fracture
Infection/Inflammation	36	Infection
	37	Inflammation
Laceration/Puncture/Rupture	22	Enucleation
	34	Hernia
	40	Laceration
	43	Puncture
	46	Rupture
Occupational Disease/Cumulative Injuries	60	Dust Disease
	61	Asbestosis
	62	Black Lung
	63	Byssinosis
	64	Silicosis
	65	Respiratory Disorders
	66	Poisoning—Chemical
	67	Poisoning—Metal
	68	Dermatitis
	69	Mental Disorder
	70	Radiation
	71	All Other OD
	72	Loss of Hearing—Occupational Disease or Cumulative Injury
	73	Contagious Disease
	74	Cancer
75	AIDS	
76	VDT-Related Disease	
77	Mental Stress	
80	All Other Cumulative Injuries	

"Nature of Injury" Group	NOI Code	"Nature of Injury" Description
Other Traumatic Injuries	01	No Physical Injury
	03	Angina Pectoris
	25	Foreign Body
	30	Freezing
	31	Loss of Hearing—Specific Injury
	32	Heat Prostration
	41	Myocardial Infarction
	42	Poisoning—General
	53	Syncope
	54	Asphyxiation
	55	Vascular Loss
	58	Vision Loss
	59	All Other, NOC
	79	Specific Injury: Hepatitis C
90	Multiple Physical Injuries Only	
91	Multiple Injuries Including Physical and Psychological	
Sprain/Strain	49	Sprain
	52	Strain
Invalid Nature of Injury	N/A	

Exhibit 24—Claim Frequency by Cause of Injury

"Cause of Injury" Group	COI Code	"Cause of Injury" Description
Burn	01	Burn or Scald—Heat or Cold Exposure: Chemicals
	02	Burn or Scald—Heat or Cold Exposure: Hot Objects or Substances
	03	Burn or Scald—Heat or Cold Exposure: Temperature Extremes
	04	Burn or Scald—Heat or Cold Exposure: Fire or Flame
	05	Burn or Scald—Heat or Cold Exposure: Steam or Hot Fluids
	06	Burn or Scald—Heat or Cold Exposure: Dust, Gases, Fumes, or Vapors
	07	Burn or Scald—Heat or Cold Exposure: Welding Operations
	08	Burn or Scald—Heat or Cold Exposure: Radiation
	09	Burn or Scald—Heat or Cold Exposure: Contact With, NOC
	11	Burn or Scald—Heat or Cold Exposure: Cold Objects or Substances
	14	Burn or Scald—Heat or Cold Exposure: Abnormal Air Pressure
	84	Burn or Scald—Heat or Cold Exposure: Electrical Current
Caught in Between	10	Caught in or Between: Machine or Machinery
	12	Caught in or Between: Object Handled
	13	Caught in or Between: Caught In, Under or Between, NOC
	20	Caught in or Between: Collapsing Materials (Slides of Earth)
Cumulative Injuries	98	Miscellaneous Causes: Cumulative, NOC
Cut/Puncture/Scrape	15	Cut, Puncture, Scrape Injured By: Broken Glass
	16	Cut, Puncture, Scrape Injured By: Hand Tool, Utensil, Not Powered
	17	Cut, Puncture, Scrape Injured By: Object Being Lifted or Handled
	18	Cut, Puncture, Scrape Injured By: Powered Hand Tool, Appliance
	19	Cut, Puncture, Scrape Injured By: Caught, Puncture, Scrape, NOC
Fall/Slip	25	Fall or Slip Injury: From Different Level (Elevation)
	26	Fall or Slip Injury: From Ladder or Scaffolding
	27	Fall or Slip Injury: From Liquid or Grease Spills
	28	Fall or Slip Injury: Into Openings
	29	Fall or Slip Injury: On Same Level
	30	Fall or Slip Injury: Slipped, Did Not Fall
	31	Fall or Slip Injury: Fall, Slip or Trip, NOC
	32	Fall or Slip Injury: On Ice or Snow
	33	Fall or Slip Injury: On Stairs

"Cause of Injury" Group	COI Code	"Cause of Injury" Description
Misc Causes	82	Miscellaneous Causes: Absorption, Ingestion or Inhalation, NOC
	87	Miscellaneous Causes: Foreign Matter (Body) in Eye(s)
	88	Natural Disaster
	89	Miscellaneous Causes: Person in Act of a Crime
	90	Miscellaneous Causes: Other Than Physical Cause of Injury
	91	Mold
	96	Losses Due to Act of Terrorism
	99	Miscellaneous Causes: Other—Miscellaneous, NOC
Motor Vehicle	40	Motor Vehicle: Crash of Water Vehicle
	41	Motor Vehicle: Crash of Rail Vehicle
	45	Motor Vehicle: Collision or Sideswipe With Another Vehicle
	46	Motor Vehicle: Collision With a Fixed Object
	47	Motor Vehicle: Crash of Airplane
	48	Motor Vehicle: Vehicle Upset
	50	Motor Vehicle: Motor Vehicle, NOC
Rubbed or Abraded By	94	Rubbed or Abraded By: Repetitive Motion
	95	Rubbed or Abraded By: Rubbed or Abraded, NOC
Strain	52	Strain or Injury By: Continual Noise
	53	Strain or Injury By: Twisting
	54	Strain or Injury By: Jumping
	55	Strain or Injury By: Holding or Carrying
	56	Strain or Injury By: Lifting
	57	Strain or Injury By: Pushing or Pulling
	58	Strain or Injury By: Reaching
	59	Strain or Injury By: Using Tool or Machinery
	60	Strain or Injury By: Strain or Injury By, NOC
	61	Strain or Injury By: Wielding or Throwing
	97	Strain or Injury By: Repetitive Motion

"Cause of Injury" Group	COI Code	"Cause of Injury" Description
Striking Against/Stepping On	65	Striking Against or Stepping On: Moving Parts of Machine
	66	Striking Against or Stepping On: Object Being Lifted or Handled
	67	Striking Against or Stepping On: Sanding, Scraping, Cleaning Operations
	68	Striking Against or Stepping On: Stationary Object
	69	Striking Against or Stepping On: Stepping on Sharp Object
	70	Striking Against or Stepping On: Striking Against or Stepping On, NOC
Struck By	74	Struck or Injured By: Fellow Worker, Patient
	75	Struck or Injured By: Falling or Flying Object
	76	Struck or Injured By: Hand Tool or Machine in Use
	77	Struck or Injured By: Motor Vehicle
	78	Struck or Injured By: Moving Parts of Machine
	79	Struck or Injured By: Object Being Lifted or Handled
	80	Struck or Injured By: Object Handled by Others
	81	Struck or Injured By: Struck or Injured, NOC
	85	Struck or Injured By: Animal or Insect
86	Struck or Injured By: Explosion or Flare Back	
Other	N/A	

Exhibit 27—Claim Frequency by Geographic Region

Geographic Region	States
Midwest	Illinois Indiana Iowa Kansas Missouri Nebraska Oklahoma South Dakota Texas
West	Arizona Colorado Idaho Montana Nevada New Mexico Oregon Utah Hawaii Alaska
Northeast	Connecticut District of Columbia Maine Maryland New Hampshire Rhode Island Vermont
Southeast	Alabama Arkansas Florida Georgia Kentucky Louisiana Mississippi North Carolina South Carolina Tennessee Virginia

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