

# DOSH Compliance Visits and Compensable Claims Rates in Washington State, 2013-2014

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## **Executive Summary**

Since 2002 the Safety & Health Assessment & Research for Prevention (SHARP) program of the Washington State Department of Labor and Industries (L&I) has conducted annual analyses of the association between enforcement and consultation activities of the Washington State Division of Occupational Safety & Health (DOSH) and compensable claims rates. Most of these annual reports have shown that DOSH enforcement inspections at 'fixed-site' industry workplaces were associated with a decline in claims rates relative to those businesses that had no DOSH visits (Baggs et al. 2003; SHARP Technical Reports 2006, 2007, 2013). But due to the greater volatility of claims rates at 'non-fixed-site' businesses and the small numbers of consultation visits satisfying our study selection criteria, several annual analyses did not find statistically significant changes among 'non-fixed-site' businesses receiving enforcement visits or at business receiving only consultation visit(s) during the same evaluation periods.

In 2011, we pooled ten previous annual studies together covering inspections and consultations from 1999 through 2008. With much larger number of DOSH visits, we were able to estimate the impact of DOSH visits with greater statistical confidence. The results of the pooled analysis provide strong evidence that DOSH inspection and consultation activities make a significant contribution to reducing claims rates and costs in the period following the visit (Foley et al., 2012). They also suggest that while enforcement has a similar impact in both fixed and non-fixed-site industries, consultation has a particularly strong effect in the non-fixed establishments.

With this pooled analysis serving as a benchmark, this one-year analysis re-examines the question of whether a greater decline in compensable claims rates occurred among the set of business receiving DOSH inspection and consultation visits in 2013 than that at businesses not receiving any DOSH visits. The impact of DOSH activities on compensable claims rates during SFY 2013-2014 was evaluated separately for fixed and the non-fixed-site industries for all accounts and by size of employers (smaller 5-24 FTEs, medium 25-49 FTEs, and larger  $\geq 50$  FTEs). Additional analyses were conducted for DOSH programmed or unprogrammed inspections, as well as inspections with citation or without citation.

The methods used in this analysis mirror those used in the previous studies. The following inclusion criteria were used to select the group of accounts for this study:

1. Only companies reporting hours each quarter during State Fiscal Years (SFY) 2011-2014.
2. State Fund companies.
3. Companies with a single business location.
4. Companies with at least 5 FTEs per year during SFY 2011-2014.
5. Companies with no DOSH activity during the two years prior to the year of the DOSH activity (SFY 2011-2012).

Descriptive analyses were conducted first for the changes in compensable claims rate by SFY. Because average account size and the account's prior history of compensable claims rates were important factors in evaluating the impact of DOSH activities, the changes in compensable claims rates were examined in multivariate analyses adjusting for these factors.

Accounts included (see Figure 1):

- The 16,930 accounts which satisfied the study criteria represented 6.2% of the 274,591 identified accounts reporting hours in at least one quarter during SFY 2011-2014.
- 160 accounts had at least one DOSH consultation visit,
- 478 accounts had at least one inspection, and
- 24 accounts had at least one inspection AND one consultation visit during SFY 2013.
- Of the 478 accounts with DOSH enforcement inspections, 261 (54.6%) received at least one DOSH programmed inspection
- 384 (80.3%) of all inspections resulted in at least one citation during SFY 2013.

It should be noted that, as compared to last year's study, the number of accounts with inspections in the baseline year (SFY 2013) was substantially smaller. In last year's study there were 674 accounts with inspections. Nearly all of this decrease in activity came from a reduction in the number of "programmed" inspections (261 in this year's study, 470 in last year's). It should be emphasized that this decline occurred not only in the DOSH activity captured in this study, but also in the overall count of DOSH inspections, including among those accounts not fitting the study criteria.

**Impact of DOSH enforcement inspections and consultations on compensable claims rates:**

DOSH enforcement and consultation activity was associated with substantial decreases in claims rates one year following the activity in fixed-site industries (see Figure 2). For non-fixed-site industries only consultation visits were associated with decreases in claims rates. After adjusting for average size of the accounts and the compensable claims rates in the pre-study period:

- Fixed-site industries
  - DOSH inspections were associated with a 16.7% greater decline in compensable claims rates from SFY 2013 to SFY 2014 than accounts with no DOSH activity, and this was statistically significant ( $p=0.041$ ).
  - DOSH consultations were associated with a 23.0% greater decline in compensable claims rates from SFY 2013 to SFY 2014 than accounts with no DOSH activity, though this was not quite statistically significant ( $p=0.144$ ).

- Non-fixed-site industries
  - DOSH inspections were associated with a 2.5% greater *increase* in compensable claims rates from SFY 2013 to SFY 2014 than accounts with no DOSH, though this was not statistically significant ( $p=0.817$ ).
  - DOSH consultations were associated with a 42.6% greater decline in compensable claims rates from SFY 2013 to SFY 2014 relative to accounts with no DOSH activity, and this was statistically significant ( $p=0.001$ ).
  
- Size: The results for this year's enforcement and consultation activities among the smaller-sized accounts (5-24 FTEs) were inconsistent in direction and were not statistically significant (see Figure 3).
  - Enforcement activity had a slightly impact among the smaller fixed-site accounts: DOSH enforcement inspections were associated with a 19.2% greater decline in compensable claims rates from SFY 2013 to SFY 2014 ( $p=0.339$ ). Consultation activities were also associated with a 47% greater decrease in compensable claims rates for smaller accounts ( $p=0.100$ ).
  - Among smaller, non-fixed-site accounts, enforcement was associated with an 18% greater *increase* in compensable claims rates ( $p=0.343$ ). Consultation was associated with an 11.8% greater decrease than accounts with no DOSH activity ( $p=0.906$ ).

**Impact of DOSH enforcement on non-musculoskeletal compensable claims rates:**

Because there is no specific rule in Washington State covering the hazards which lead to musculoskeletal disorders (MSDs), it may be the case that such hazards receive less emphasis during inspections than those for which rules do exist. When we examine the association of DOSH visits with changes in non-MSD compensable claims rates we find that

the impact of DOSH activity is strengthened (see Figure 4). This is consistent with the results found in the ten-year pooled study (1999-2008) and in the previous one-year study:

- Fixed-site industries
  - DOSH inspections were associated with a 22.8% greater decline in non-MSD compensable claims rates from SFY 2013 to SFY 2014 than accounts with no DOSH activity ( $p=0.036$ ).
  - DOSH consultations were associated with a 21% greater decline in non-MSD compensable claims rates from SFY 2013 to SFY 2014 than accounts with no DOSH activity, though this was not statistically significant ( $p=0.279$ ).
- Non-fixed-site industries
  - DOSH inspections were associated with a 3.7% greater decline in non-MSD compensable claims rates from SFY 2013 to SFY 2014 than accounts with no DOSH, though this was not statistically significant ( $p=0.750$ ).
  - DOSH consultations were associated with a 53.0% increase in non-MSD compensable claims rates from SFY 2013 to SFY 2014 relative to accounts with no DOSH activity, and this was statistically significant ( $p=0.002$ ).

**Impact of DOSH enforcement with and without citations on compensable claims rates:**

In this year's cohort, when enforcement uncovers violations that result in citations there is a mixed impact on claims rates as compared to the case when inspections do NOT result in citations (see Figure 5).

- Fixed-site industries: The cohort of 259 accounts that experienced a DOSH enforcement inspection with citations experienced a statistically significant 18% greater decline in compensable claims rates from SFY 2013 to SFY 2014 relative to the no DOSH cohort ( $p=0.045$ ). On the other hand, the 48 accounts without citation

experienced only an 11.2% relative decrease in claims rate, which was not statistically significant ( $p=0.524$ ).

- Non-fixed-site industries: Contrary to last year, there were no statistically significant effects on enforcement, with or without citation, in this year's cohort of inspected accounts. Enforcement without citations was associated with a small relative decrease in claims rates (-5.1%), but this was not statistically significant. The 112 accounts that experienced a DOSH enforcement inspection with citations experienced a non-significant 4.8%% relative *increase* in compensable claims rates from SFY 2013 to SFY 2014 relative to the no DOSH cohort ( $p=0.709$ ).
- Size: Enforcement activity with citations had a slightly greater impact among the smaller fixed-site accounts, those with 5-24 FTEs: Enforcement inspections with citations were associated with a 21.0% ( $p=0.321$ ) greater decline in compensable claims rates than accounts without DOSH inspections. Among non-fixed workplaces, enforcement inspections with citations were associated with a statistically insignificant *increase* in compensable claims rates.

### **Impact of DOSH enforcement with and without citations on non-MSD compensable claims**

When we remove compensable musculoskeletal claims and test the association of inspections with and without citations on the change in non-MSD claims rates we still find, as in the 10-year pooled study, that inspection with citations has a stronger impact on compensable claims rates than inspection without citations (see Figure 6). However, only in fixed-site industries is the effect statistically significant.

- Fixed-site industries: The cohort of 264 accounts that had a DOSH enforcement inspection with citations saw a 24.6% greater decline in compensable claims rates

from SFY 2013 to SFY 2014 relative to the no DOSH cohort ( $p=0.043$ ), while the 51 accounts without citation had only a 14.7% relative decrease in claims rate, which was not statistically significant ( $p=0.432$ ).

- Non-fixed-site industries: Enforcement with citation was associated with a substantially larger decline in claims rates, but the effect was not statistically significant. The 120 accounts that had a DOSH enforcement inspection with citations saw a 6.2% greater decline in compensable claims rates from SFY 2013 to SFY 2014 relative to the no DOSH cohort ( $p=0.624$ ), while the 43 accounts without citation experienced a non-significant 8.1% relative *increase* in their non-MSD compensable claims rate.

As in the pooled ten-year study, the effect of removing MSD claims from the model was a substantially stronger impact on non-MSD claims rates following DOSH activity. This supports the view that hazards related to non-MSD claims are more central to the DOSH inspection activity during site visits and that, once hazards are abated, the impact on non-musculoskeletal injuries is more immediate than that for MSDs.

## **Conclusions**

This one-year study fits well within the range of the results found in the analysis of ten years of DOSH enforcement and consultation and the magnitude of the decline in compensable claims rates following DOSH activity suggests that these interventions may trigger broad improvements in safety practices at visited workplaces that result in preventing injuries. The effect was strongest when examining the impact of inspections with citations on non-musculoskeletal compensable claims rates. This may be due both to a delayed impact on MSDs, the “shock” effect on management of receiving a citation and to the possibility that DOSH visits focus on hazards for which specific rules exist. As previously noted, the most substantive impacts were found among the smaller employers and in fixed-site industries.

This study suggests both enforcement inspection and consultation visits continue to make substantial contributions to reaching the agency's goal of reducing the workplace injury and illness rate in Washington State.

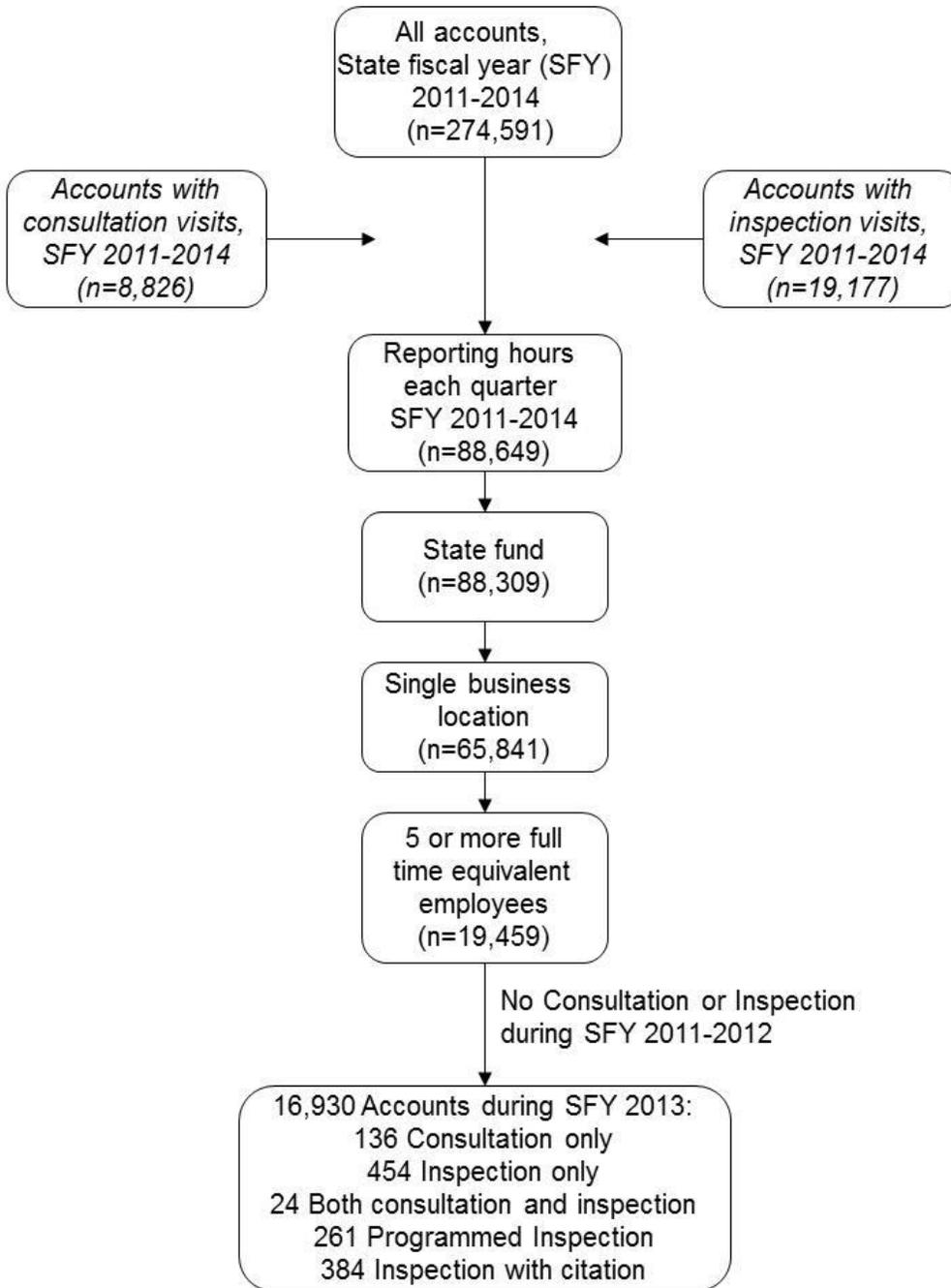


Figure 1. Data extraction from Washington workers' compensation employer account database.

Figure 2: Percent Change in Compensable Claims Rate: No DOSHvs Enforcement vs Consultation by Industry Type, 2013-2014

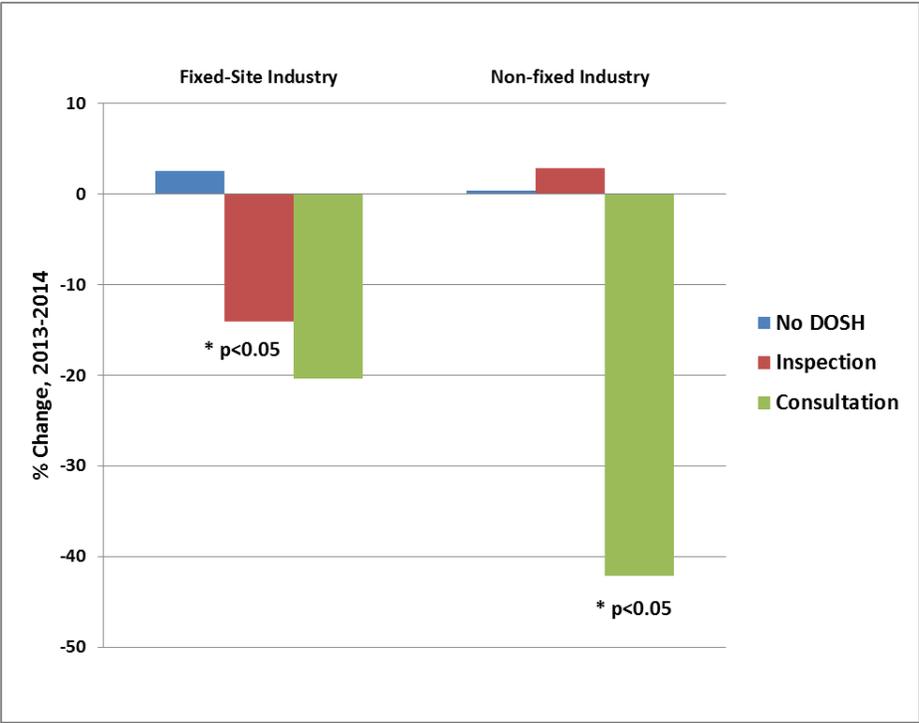


Figure 3: Percent Change in Compensable Claims Rate, FTE 5-24: No DOSH vs Enforcement vs Consultation by Industry Type, 2013-2014

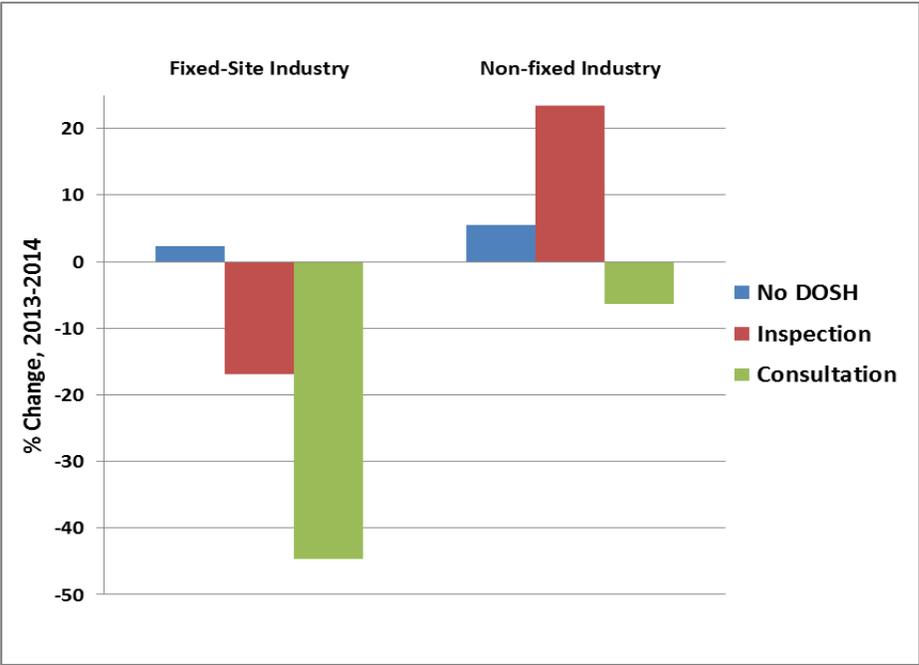


Figure 4: Percent Change in Non-MSD Compensable Claims Rate, No DOSH vs Enforcement vs Consultation, by Industry Type, 2013-2014

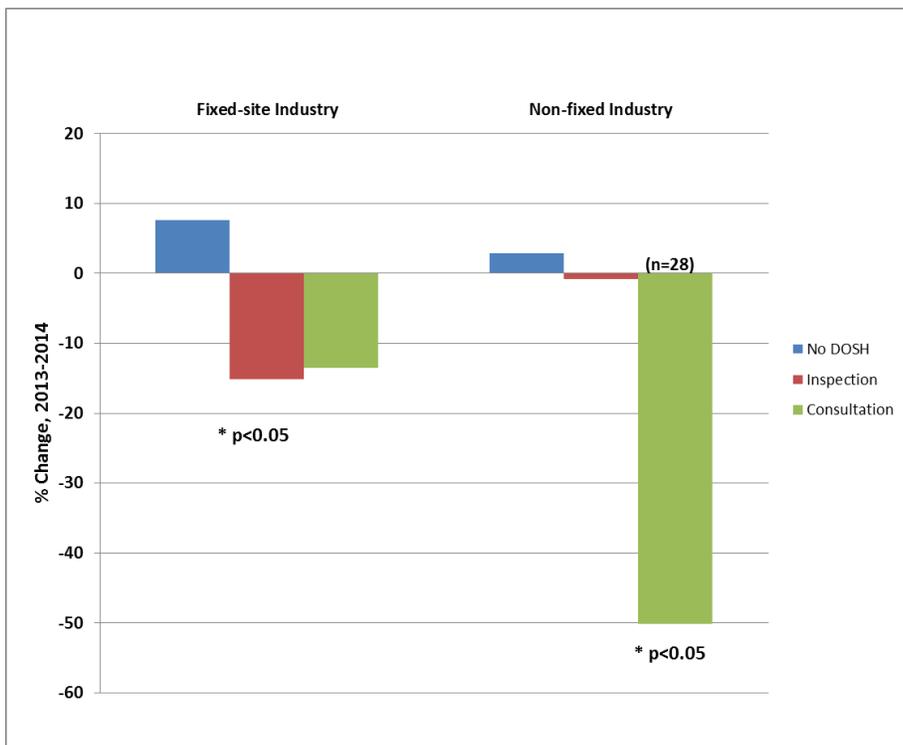


Figure 5: Percent change in Compensable Claims Rate, No DOSH vs DOSH/No Citation vs DOSH/Yes Citation, by Industry Type, 2013-2014

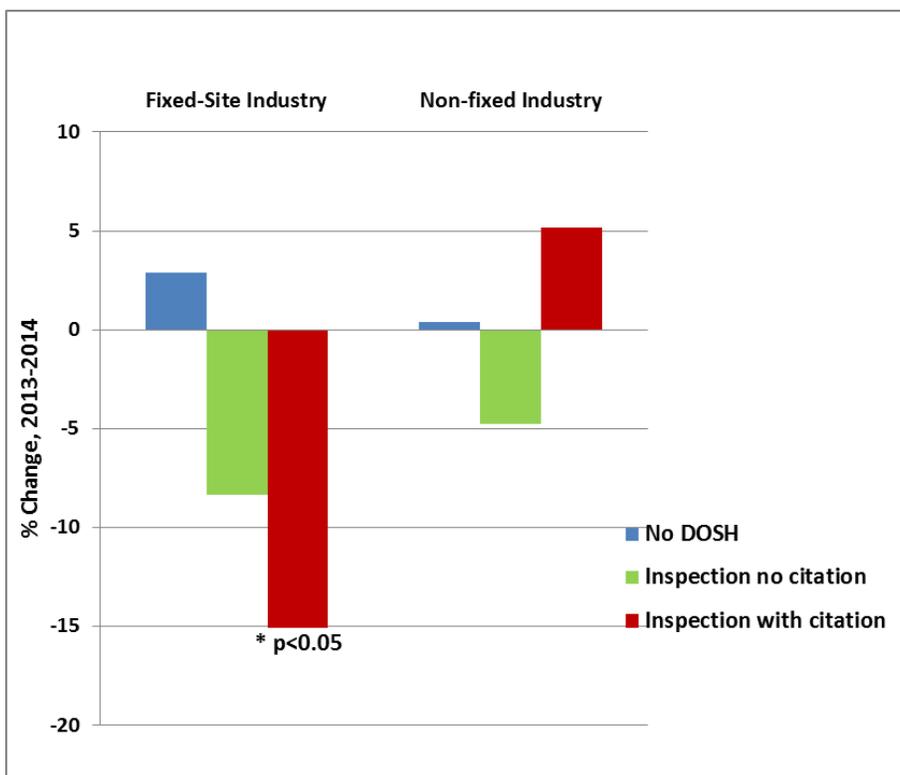
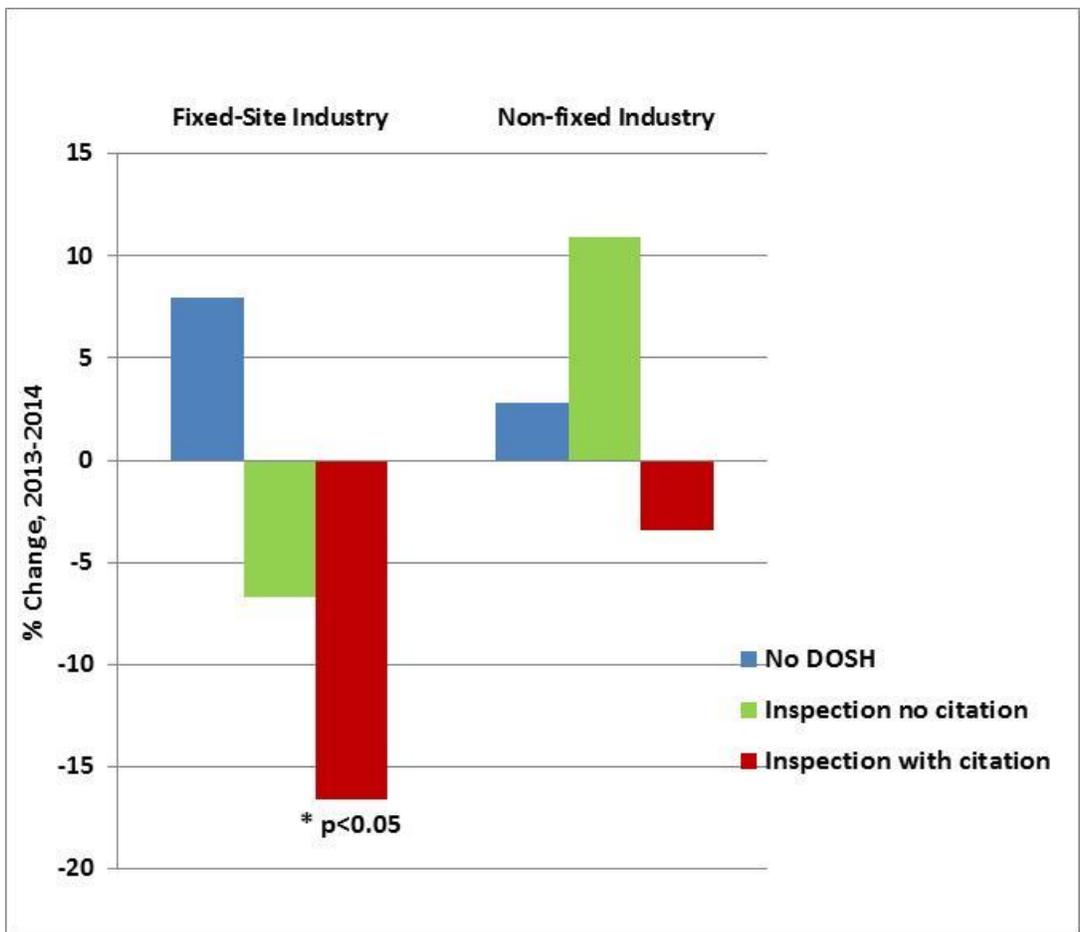


Figure 6: Percent change in Non-MSD Compensable Claims Rate, No DOSH vs DOSH/No Citation vs DOSH/Yes Citation, By Industry Type, 2013-2014



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