

DOSH Compliance and Consultation Visits and Compensable Claims Rates in Washington State, 2014-2015

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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 (Foley et al, 2012; SHARP Technical Reports 2007, 2013, 2015). 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 2014 than that at businesses not receiving any DOSH visits. The impact of DOSH activities on compensable claims rates during SFY 2014-2015 was evaluated separately for fixed and the non-fixed-site industries for all accounts and for just smaller-sized businesses (5-24 FTEs). Additional analyses were conducted for DOSH programmed or unprogrammed inspections, as well as for 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) 2012-2015.
2. State Fund companies.
3. Companies with a single business location.
4. Companies with at least 5 FTEs per year during SFY 2012-2015.
5. Companies with no DOSH activity during the two years prior to the year of the DOSH activity (SFY 2012-2013).

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 17,548 accounts which satisfied all the study criteria represented 6.3% of the 276,959 identified accounts reporting hours in at least one quarter during SFY 2012-2015.
- 150 accounts had at least one DOSH consultation visit, and
- 563 accounts had at least one inspection,
- 18 accounts had at least one inspection AND one consultation visit during SFY 2014.
- Of the 563 accounts with DOSH enforcement inspections, 285 (50.6%) received at least one DOSH programmed inspection
- 449 (79.8%) of all inspections resulted in at least one citation during SFY 2014.

It should be noted that, as compared to last year's study, the number of accounts with inspections in the baseline year (SFY 2014) has grown by 18%. In SFY 2013 there were 478 accounts with inspections, as compared to 563 in SFY 2014. Most of this increase in activity came from an increase in the number of "unprogrammed" inspections (278 in SFY 2014, 217 in SFY 2013). It should be emphasized that this increase only goes partway toward reaching the level of inspection activity seen in previous years. In addition, there is an increasing share of non-fixed industry workplaces in this year's cohort as compared to previous years. In SFY 2012, for example, non-fixed industry inspections comprised 24% of the eligible inspections studied. In the SFY2014 cohort in this year's study this cohort represents 38% of the total.

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

DOSH enforcement activity was associated with a substantial decrease in claims rates one year following the activity in fixed-site industries (see Figure 2). For non-fixed-site industries inspections were also associated with decreases in claims rates, but the decrease was not statistically significant. Workplaces that received consultation visits did not experience decreases in their claims rates in either industry type. After adjusting for average size of the accounts and the compensable claims rates in the pre-study period:

- Fixed-site industries
 - Workplaces without any DOSH activity experienced an average decrease in their compensable claims rate of 6.5% from SFY2014 to SFY2015.
 - DOSH inspected workplaces had a decrease of 23.4% in their compensable claims rate, and this was statistically significantly different from the NO DOSH rate change ($p=0.017$).

- DOSH consultations were associated with a 1.0% decline in compensable claims rates. This was not statistically different from the NO DOSH cohort ($p=0.144$).

- Non-fixed-site industries
 - Workplaces without any DOSH activity experienced an average decrease in their compensable claims rate of 7.5% from SFY2014 to SFY2015.
 - DOSH inspected workplaces had a decrease of 18.4% in their compensable claims rate, but this was not statistically significantly different from the NO DOSH rate change ($p=0.293$).
 - DOSH consultations were associated with a 32% *increase* in compensable claims rates. However, this was not statistically different from the NO DOSH cohort ($p=0.114$).

Impact of DOSH enforcement inspections and consultations on compensable claims rates in smaller businesses (5-24 FTEs):

Results of DOSH enforcement activity among smaller-sized establishments mirror those among workplaces of all sizes. Inspections were associated with a substantial decrease in claims rates one year following the activity in fixed-site industries (see Figure 3). For non-fixed-site industries inspections were also associated with decreases in claims rates, but the decrease was not quite statistically significant. Claims rate changes in workplaces that received consultation visits changed in opposite directions, depending on industry type. After adjusting for average size of the accounts and the compensable claims rates in the pre-study period:

- Fixed-site industries

- Workplaces under 25 FTEs without any DOSH activity experienced an average decrease in their compensable claims rate of 6.6% from SFY2014 to SFY2015.
- DOSH inspected workplaces had a decrease of 41.1% in their compensable claims rate, and this was statistically significantly different from the NO DOSH rate change ($p=0.003$).
- DOSH consultations were associated with a 53.8% decline in compensable claims rates. Because of the small numbers of such visits ($n=38$), this was not quite statistically different from the NO DOSH cohort ($p=0.098$).
- Non-fixed-site industries
 - Workplaces without any DOSH activity experienced an average decrease in their compensable claims rate of 7.1% from SFY2014 to SFY2015.
 - DOSH inspected workplaces had a decrease of 28.2% in their compensable claims rate, but this was not quite statistically significantly different from the NO DOSH rate change ($p=0.126$).
 - DOSH consultations were associated with a 30.5% *increase* in compensable claims rates. However, this was not statistically different from the NO DOSH cohort ($p=0.197$).

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. In fact, when we examine the association of DOSH enforcement visits with changes in *non-MSD compensable claims rates* we find that the impact of DOSH inspections is strengthened (see Figure 4). This is consistent

with the results found in the ten-year pooled study (1999-2008) and in previous one-year studies. Consultation visits, on the other hand, were not followed by claims reductions:

- Workplaces without any DOSH activity experienced an average decrease in their non-MSD compensable claims rate of 7.7% from SFY2014 to SFY2015.
- DOSH inspected workplaces had a decrease of 26.2% in their non-MSD compensable claims rate, and this was statistically significantly different from the NO DOSH rate change ($p=0.027$).
- DOSH consultations were associated with only a 0.3% decline in non-MSD compensable claims rates. This was not statistically different from the NO DOSH cohort ($p=0.787$).

- Non-fixed-site industries
 - Workplaces without any DOSH activity experienced an average decrease in their non-MSD compensable claims rate of 9.4% from SFY2014 to SFY2015.
 - DOSH inspected workplaces had a decrease of 30.8% in their non-MSD compensable claims rate. This was marginally significantly different from the NO DOSH rate change ($p=0.073$).
 - DOSH consultations were associated with a 35% *increase* in non-MSD compensable claims rates. Again, because of the small numbers of such visits ($n=28$), this was not statistically different from the NO DOSH cohort ($p=0.145$).

Impact of DOSH “programmed” vs “unprogrammed” inspection visits

DOSH inspections are classified as being either “programmed” or “unprogrammed”. In the former case, a workplace may be scheduled for an inspection based upon the industry to which it belongs and the time elapsed since its last inspection. Such scheduling lists may be based upon the risk of fatal or non-fatal injuries in an industry, and upon the presence of health hazards which may lead to such diseases as cancers, which are not likely to be captured in workers’ compensation claims records. Unprogrammed inspections are largely composed of worker complaints, mandatory employer reporting of injuries resulting in inpatient hospitalization, follow-up inspections to check that hazard abatement agreements are being adhered to, and “drive-by” inspections of worksites in the construction industry. In SFY 2014 about 50% of DOSH enforcement visits among the set of eligible accounts in this study were programmed. This is a decline from previous years when programmed inspections accounted for about 60% of the total. In this year’s study, as before, it was unprogrammed inspections that were more likely to result in a statistically significant decrease in compensable claims rates. After adjusting for average size of the accounts and the compensable claims rates in the pre-study period:

- Fixed-site industries
 - Workplaces without any DOSH activity experienced an average decrease in their compensable claims rate of 6.6% from SFY2014 to SFY2015.
 - Workplaces receiving programmed DOSH inspections had a decrease of only 3.2% in their compensable claims rate, which was not statistically significantly different from the NO DOSH rate change ($p=0.763$).
 - Workplaces receiving unprogrammed DOSH inspections had a decrease of 35% in their compensable claims rates, which was statistically different from the NO DOSH cohort ($p=0.001$).

- Non-fixed-site industries

- Workplaces without any DOSH activity experienced an average decrease in their compensable claims rate of 7.6% from SFY2014 to SFY2015.
- Workplaces receiving programmed DOSH inspections had a decrease of only 2.6% in their compensable claims rate, which was not statistically significantly different from the NO DOSH rate change ($p=0.731$).
- Workplaces receiving unprogrammed DOSH inspections had a decrease of 36.6% in compensable claims rates. This was statistically different from the NO DOSH cohort ($p=0.033$).

When this analysis was repeated on the smaller-sized workplaces there was an even greater impact on the decrease in compensable claims rate for BOTH unprogrammed and programmed inspections, although only the unprogrammed inspections' impact was statistically significant (a 54% and 39% reduction at fixed and non-fixed-site industries, respectively).

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 somewhat *smaller* reduction in the following year's claims rates as compared to the case when inspections do NOT result in citations (see Figure 5). This is contrary to results seen in most previous one-year studies, as well as in the ten-year compiled study (Foley et al., 2012).

- Fixed-site industries
 - Workplaces without any DOSH activity experienced an average decrease in their compensable claims rate of 6.6% from SFY2014 to SFY2015.
 - Workplaces receiving DOSH inspections with a citation had a decrease of 15.6% in their compensable claims rate. However, this was not statistically significantly different from the NO DOSH rate change ($p=0.267$).

- Workplaces receiving DOSH inspections that did *not* result in any citation had a decrease of 47.6% in their compensable claims rate. This was statistically significantly different from the NO DOSH rate change ($p < 0.001$).
- Non-fixed-site industries
 - Workplaces without any DOSH activity experienced an average decrease in their compensable claims rate of 7.6% from SFY2014 to SFY2015.
 - Workplaces receiving DOSH inspections with a citation had a decrease of 16.5% in their compensable claims rate. However, this was not statistically significantly different from the NO DOSH rate change ($p = 0.453$).
 - Workplaces receiving DOSH inspections that did *not* result in any citation had a decrease of 25.0% in their compensable claims rate. However, this was not statistically significantly different from the NO DOSH rate change ($p = .310$).

Enforcement activity with citations had a *much greater* impact among the smaller fixed-site accounts, those with 5-24 FTEs: enforcement inspections with citations were associated with a 39.4% ($p = 0.009$) decline in compensable claims rates. Among non-fixed workplaces, enforcement inspections with citations were also associated with a *decrease* in compensable claims rates, though this was not statistically significant. Inspections that did not result in citations also had decreases in compensable claims rates, but small numbers of such cases meant that statistical significance was not achieved.

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 find a

stronger effect of inspection regardless of whether or not citations are issued. As before, inspections without citations were associated with a greater decrease in claims rates among the fixed-site industries. On the other hand, among non-fixed industries, inspections with citations now have a stronger impact on compensable claims rates than inspection without citations (see Figure 6).

- Fixed-site industries

- Workplaces without any DOSH activity experienced an average decrease in their non-MSD compensable claims rate of 7.8% from SFY2014 to SFY2015.
- Workplaces receiving DOSH inspections with a citation had a decrease of 16.3% in their non-MSD compensable claims rate. However, this was not statistically significantly different from the NO DOSH rate change ($p=0.379$).
- Workplaces receiving DOSH inspections that did *not* result in any citation had a decrease of 58.2% in their non-MSD compensable claims rate. This was statistically significantly different from the NO DOSH rate change ($p<0.001$).

- Non-fixed-site industries

- Workplaces without any DOSH activity experienced an average decrease in their non-MSD compensable claims rate of 9.5% from SFY2014 to SFY2015.
- Workplaces receiving DOSH inspections with a citation had a decrease of 32.8% in their non-MSD compensable claims rate. This was borderline statistically significantly different from the NO DOSH rate change ($p=0.090$).
- Workplaces receiving DOSH inspections that did *not* result in any citation had a decrease of 24.0% in their non-MSD compensable claims rate.

However, this was not statistically significantly different from the NO DOSH rate change ($p=.503$).

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 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 substantial decreases were found among the smaller employers and in fixed-site industries.

This study suggests enforcement inspections continue to make substantial contributions to reaching the agency’s goal of reducing the workplace injury and illness rates in Washington State.

Figure 1: Extraction of eligible study accounts, SFY 2012-2015

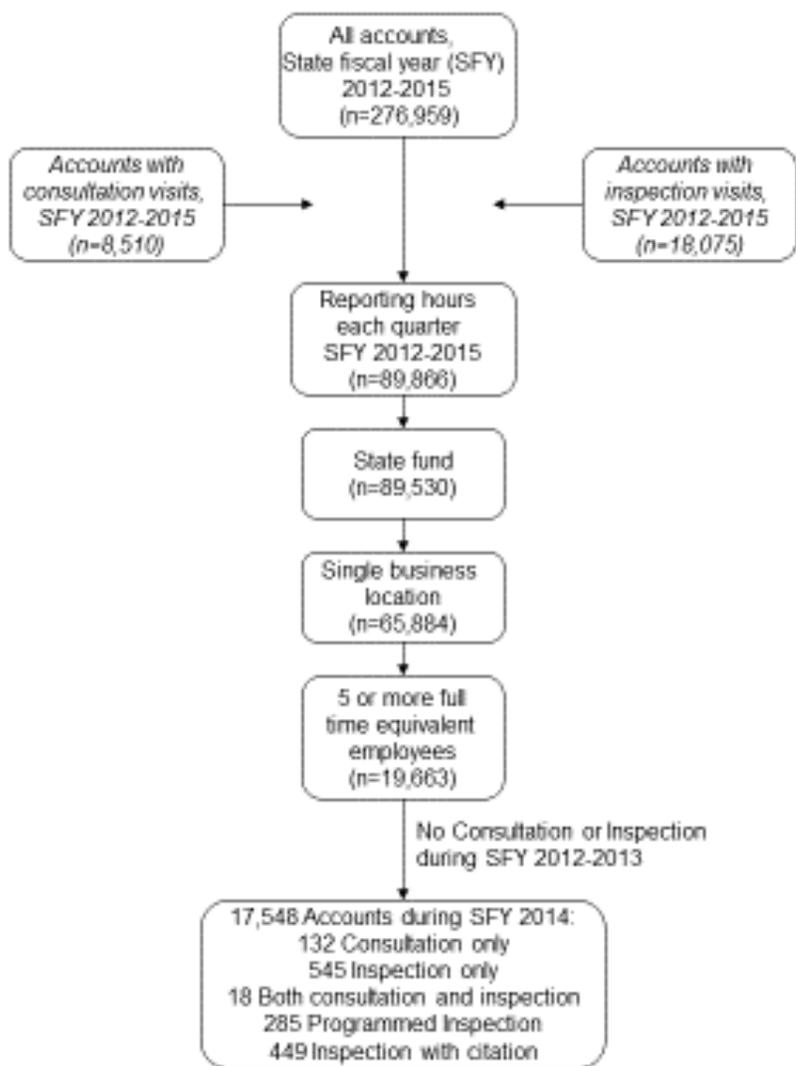


Figure 1. Data extraction from Washington workers' compensation employer account database.

Figure 2: Percent Change in Compensable Claims Rate: No DOSH vs Enforcement vs Consultation by Industry Type, 2014-2015

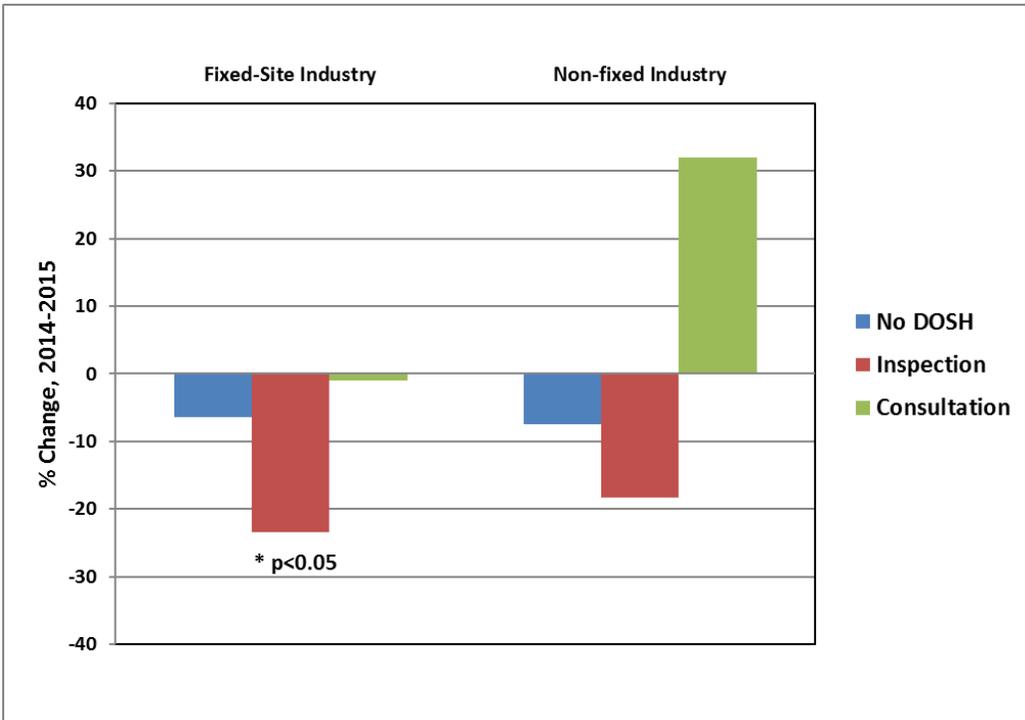


Figure 3: Percent Change in Compensable Claims Rate, FTE 5-24: No DOSH vs Enforcement vs Consultation by Industry Type, 2014-2015

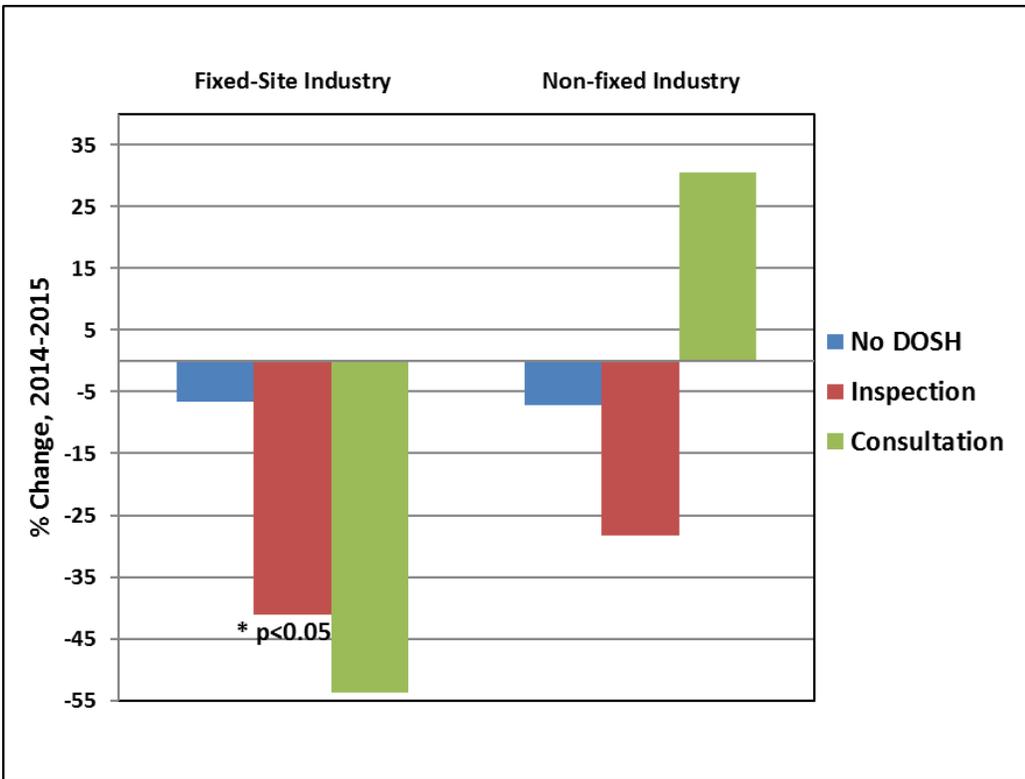


Figure 4: Percent Change in Non-MSD Compensable Claims Rate, No DOSH vs Enforcement vs Consultation, by Industry Type, 2014-2015

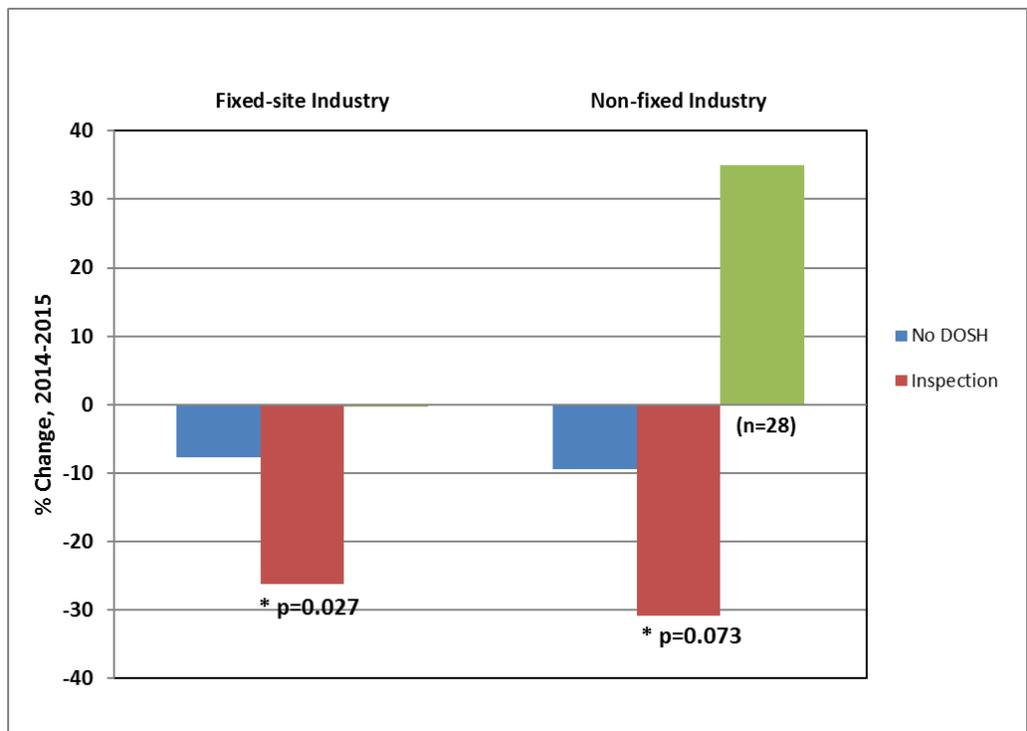


Figure 5: Percent change in Compensable Claims Rate, No DOSH vs DOSH/No Citation vs DOSH/Yes Citation, by Industry Type, 2014-2015

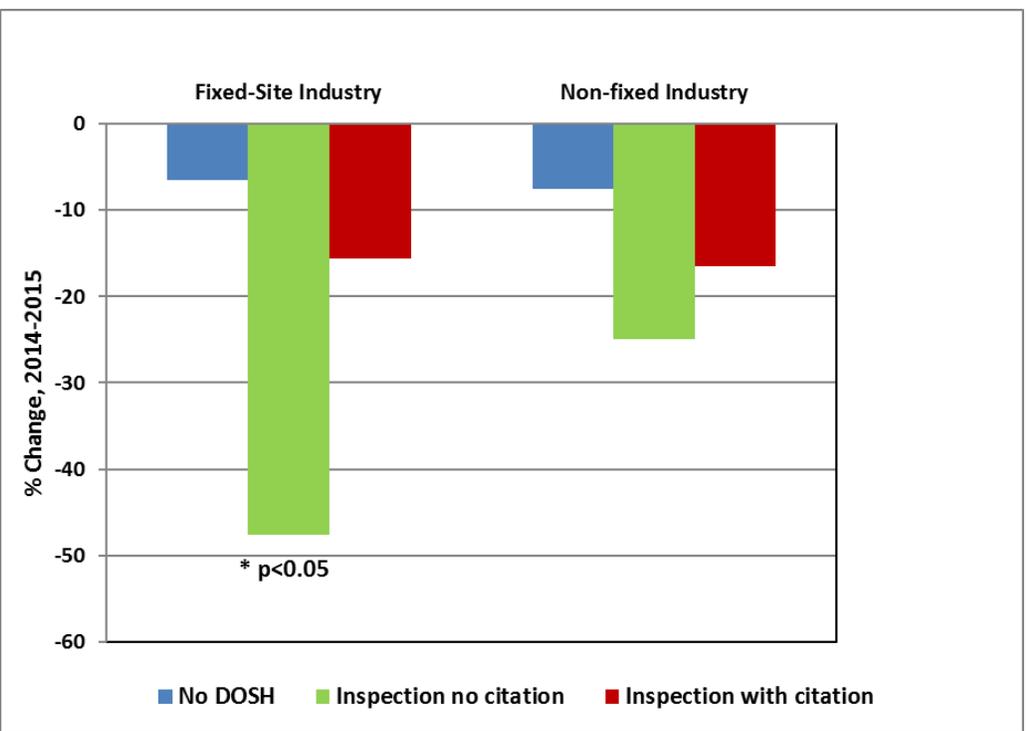
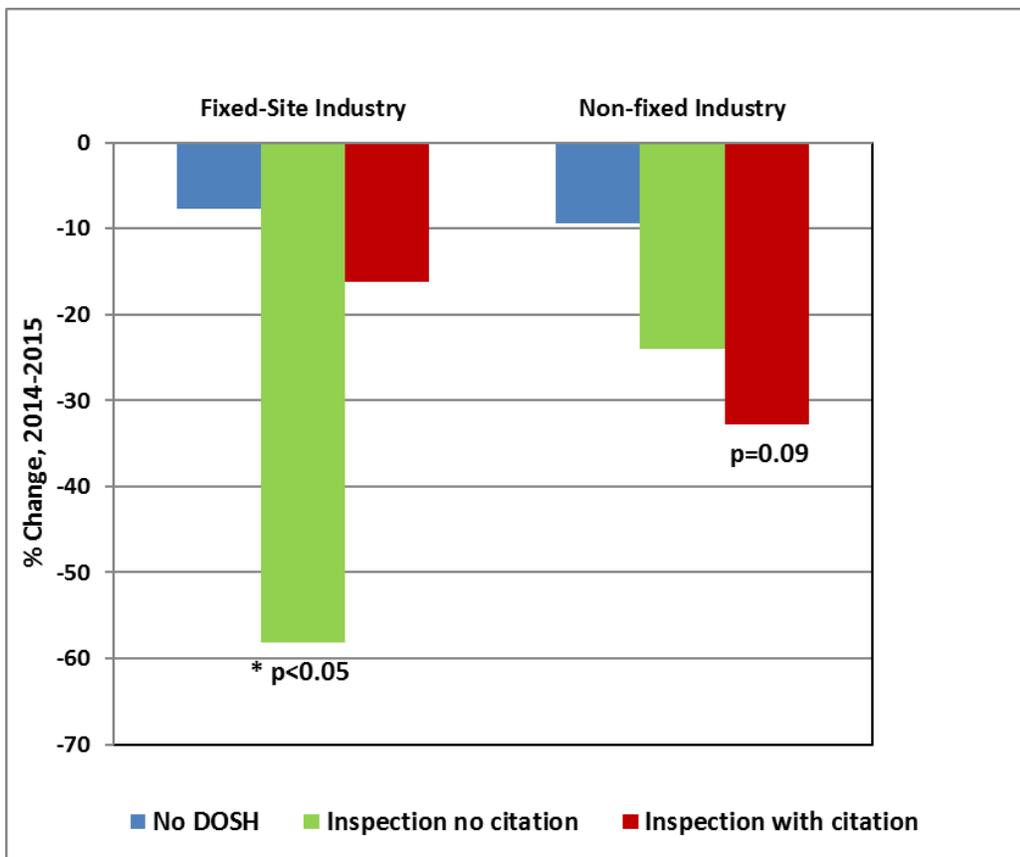


Figure 6: Percent change in Non-MSD Compensable Claims Rate, No DOSH vs DOSH/No Citation vs DOSH/Yes Citation, By Industry Type, 2014-2015



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