

Citation

ERG. (2004). Evaluation of OSHA's impact on workplace injuries and illnesses in manufacturing using establishment-specific targeting of interventions: programmed inspections vs. high hazard notification letters. Final report. Lexington, MA: Author.

Highlights

- The study's objective was to determine the impact of two types of notifications sent by the Occupational Safety & Health Administration (OSHA)—those with and without subsequent inspections—on workplace injuries.
- The study used a regression model to analyze annual changes in workplace injuries in manufacturing firms that received OSHA notifications of high existing injury rates and/or inspections in the current or past two years.
- The study found that firms that received notifications without a subsequent inspection experienced a statistically significant decline in injury rates. Firms that received a notification and an inspection experienced larger declines.
- The quality of the causal evidence presented in this study is low. This means we are not confident that OSHA notifications and inspections caused the reductions in workplace injuries.

OSHA Enforcement Activities and Outcomes

The study examined the effect of two types of OSHA notifications—cooperative compliance letters and high hazard notifications letters—on workplace injuries. Letters were systematically sent to firms with high injury and illness rates to inform them of their classification as high-risk firms. Letters also indicated that firms had an increased chance of receiving an OSHA inspection in the coming year. The authors estimated the effect of these notifications when followed or not followed by a programmed inspection. The outcome of interest was the annual change in injuries in the year of inspection and for two subsequent years, measured by the difference in the natural log of the number of lost workday injuries and illnesses (LWDII).

Features of the Study

The study used a regression model to compare the changes in workplace injury rates associated with OSHA notifications and inspections. Firms receiving a notification or inspection from OSHA authorities were compared with firms that did not receive this type of attention. Regressions included six variables of primary interest: indicators for having received an OSHA notification in the current year, one year ago, and two years ago and for having an associated programmed inspection in the current year, one year ago, and two years ago. The authors also controlled for the occurrence of other OSHA inspections in the

current and past two years, the percentage change in employment and hours worked at the firm, indicators for unusual events occurring at a firm (for example, strikes or layoffs), two-digit Standard Industrial Classification code, and calendar year.

The authors used OSHA Data Initiative injury and illness data for 1995 to 2001, data on notifications from the databases tracking notifications from 1998 to 2001, and information on inspections from OSHA's Integrated Management Information System Database for 1994 to 2001. The resulting data set contained 64,871 observations.

Findings

- Firms that received an OSHA notification but no subsequent inspection experienced a statistically significant reduction in LWDII cases of 4.8 to 5.1 percent over three years.
- Firms that received an OSHA notification followed by a programmed inspection experienced a larger, statistically significant reduction in LWDII cases of 12.0 to 13.8 percent over three years.

Considerations for Interpreting the Findings

In this study, the estimated reductions in LWDII cases between firms that received OSHA notifications and associated inspections might not have been caused by the notifications and inspections themselves. The changes could instead reflect underlying differences in safety levels or other factors between the firms that received a notification and/or inspection and those that did not. For instance, only firms with relatively high existing injury rates received a notification, and these firms likely had more hazardous work sites. Thus, even in the absence of notifications, these firms might have experienced different changes in injury rates as conditions deteriorated or because management made improvements to address unsafe working conditions. Alternatively, firms with high injury rates could have had these high rates by chance. In subsequent years, injury rates would then be expected to decline to normal levels without any OSHA intervention.

Causal Evidence Rating

The quality of the causal evidence presented in this study is low. This means we cannot be confident that the reductions in injury rates were caused by OSHA notifications (with or without accompanying inspections). The process for selecting firms to receive notifications suggests that notified firms are systematically different from others, rendering any group an inappropriate comparison. The approach could be validated if the study examined firms that received notification letters at random or used some underlying random variation in the receipt of the letters (which might not exist).