

Workplace Health-and-Safety Violations in Agriculture: Epidemiology and Implications for Education and Enforcement Policy

Stephen A. McCurdy, Don Villarejo and Maria Stoecklin

EXECUTIVE SUMMARY

INTRODUCTION AND RESEARCH OBJECTIVES

Agriculture is one of the most important industries in California, enjoying over \$22 billion in farm cash receipts annually. In addition to economic benefits, national and state data show that agriculture is one of the most dangerous industries with respect to occupational illnesses and injuries. Because Latino and Latina workers provide the majority of production labor in the industry, they are at uniquely increased risk for occupational injury and illness.

Regulation of the agricultural workplace is under the purview of several federal, state, and local agencies, including the U .S. Department of Labor, Occupational Safety and Health Administration, State of California (Cal-OSHA), Department of Industrial Relations, Department of Pesticide Regulation, U .S. Environmental Protection Agency, county health departments, county agricultural commissioners, and the California Highway Patrol (transportation of workers to jobs).

The fragmentation of regulatory activities causes inefficiency and confusion on the part of employers, employees, and regulators. In particular, lack of information sharing between agencies leads to ineffective enforcement and educational efforts. Consequently, a pilot program was begun in 1992 that partnered agencies to improve efficiency through sharing of resources and information. The program, intended to target industries with a history of regulatory problems, was named the Targeted Industries Partnership Program (TIPP). Agriculture and garment manufacturing were chosen as targeted industries because of their importance for California and their history of regulatory problems.

TIPP is jointly administered by the California Labor Commissioner's Office and the U.S. Department of Labor, Wage and Hour Division (USDOL-WHD). Participating agencies include the Department of Industrial Relations, Division of Labor Standards Enforcement (CDIR-DLSE); the Employment Development Department (EDD); and Cal-OSHA. During any given TIPP activity, up to twelve agencies (federal, state, or local) may be involved.

This coordinated approach helps to weave together what would otherwise be a haphazard patchwork of regulatory activity. Specific violations addressed by the TIPP inspectors include health and safety, farm-labor contractor laws licensing, registration, vehicle insurance), workers' compensation insurance, and regulations pertaining to wage and hour requirements and record keeping. In spite of the importance of these efforts in promoting workplace welfare, responsible agencies have inadequate resources for enforcement, education, and epidemiological analysis that could provide insight into the patterns of violations and help focus agency efforts.

The main research objective of this project is to characterize agricultural operations that have received notices of violation of health, safety, and labor regulations during 1993 and 1994 through TIPP and to identify patterns and risk factors for violation. Using a database of California farm

operations developed and maintained by the California Institute for Rural Studies (CIRS), we compared operations that received notices of violations through TIPP during 1993 and 1994 with those that did not. This allowed us to develop a profile of operations at high risk for labor-law violations, identify and characterize risk factors, and describe patterns of violation. In addition, TIPP files were matched against the Licensed Farm Labor Contractor file (provided by the CDIR) to identify which TIPP citations were made to licensed farm-labor contractors.

Regulatory agencies can use information profiling high-risk operations to target educational and enforcement programs within the agricultural sector. The program brings major benefit for both employees and employers. Employees have greater assurance of working in a safe work environment. Farm operators who are in compliance with the law also benefit, because more widespread compliance means they are less likely to be competing with persons reducing operating costs through noncompliance. The state as a whole stands to benefit in that improved compliance brings about safer working conditions, leading to increased productivity and reduced lost-work time, medical expenses, and other associated losses.

The specific aims of this project are to:

1. Identify the group of agricultural employers that received notices of violations through TIPP during 1993-1994, the most recently available two-year period.
2. Compare operations that received notices of violation with operations that had not.
3. Develop a characteristic risk profile of operations likely to receive notices of violation.
4. Prepare a report describing the results and including policy implications and recommendations.

The basic rationale supporting ongoing programs for assessing compliance with health-and-safety regulations is that these efforts will improve compliance and thereby reduce occupational health risks. However, compliance-assessment efforts typically are enforcement-based or complaint-based, which inevitably injects bias and error into statistical summaries because inspections do not involve a representative sample of operations. The consequences of this for policymakers is that they often must act without valid and reliable information.

One reason that statistical assessment of enforcement and compliance receives little support is cost. In addition, workplace regulation is fragmented by the involvement of several agencies comprising disparate jurisdictions.

In this context, TIPP represents a creative effort to use resources efficiently by partnering several agencies with responsibility for regulating the agricultural workplace. We used data from this program to develop a risk profile of operations that received notices of violation for 1993 and 1994. The main findings and recommendations are listed below. Although they were not part of the original specific aims for this project, we also examined Cal-OSHA reports of serious violations entered in the Integrated Management Information System (IMIS) and examined TIPP data in the context of labor expense as a surrogate for labor activity or demand.

SUMMARY OF METHODS

The general goal of this study was to identify agricultural operations receiving notices of violation through TIPP and compare them with operations that had not received notices of violation. We linked reports of violations from the TIPP database for 1993 and 1994 to specific agricultural producers contained in a large database of over 37,000 California farm operators developed and maintained by the California Institute for Rural Studies. Through this linkage, we identified those producers with violations and compared this group to producers without violations. The results were used to develop a comparative profile of high-risk producers for the purpose of focusing educational and enforcement resources. We also linked the TIPP files to the CDIR's Licensed Farm Labor Contractor file to identify which citations had been issued to licensed farm labor contractors.

In this manner we were able to identify operations that had received notices of violation through TIPP in 1993 and 1994 and identify them as farms, licensed farm-labor contractors, or unlicensed farm-labor contractors. For farmers we were able to compare cited operations with those that had not received notices of violation. Using standard statistical techniques, we compared these two groups to develop a profile of operations receiving notices of violation. Reports from the OSHA IMIS database and labor expense data were obtained from the relevant governmental agencies as described in this report.

SUMMARY OF RESULTS

1. The TIPP databases yielded 323 reports for 1993 and 278 for 1994, for a combined total of 601 reports comprising 1525 notices of violation.
2. Of the 601 TIPP reports for 1993 and 1994, 261 (43.4%) involved farm operators. While 69%(223/323) of the 1993 reports involved multiple notices of violation, only 19% (53/278) of the 1994 reports did so. We note, however, that participating agencies may keep separate records of their enforcement actions. In particular, health-and-safety violations identified by Cal-OSHA were no longer included in the TIPP database after 1993. Thus, no single set of records reflecting TIPP activities exists.
3. Of the 1525 notices of violation contained in TIPP reports for 1993 and 1994, 131 (8.6%) involved health-and-safety infractions. The most common of these were inadequate washing facilities, cited in 70 (53.4%) notices of violation.
4. Of the 601 TIPP reports for 1993 and 1994, farm-labor contractors represented 27% (87/323) for 1993 and 1994 (74/278).
5. One hundred sixty-nine TIPP reports comprising 520 notices of violation were matched with operations within the California Farm Operators Database. Operations receiving notices of violation from TIPP during 1993 or 1994 and matched to the California Farm Operators Database had greater acreage than operations not receiving notices of violation (mean 8,675.7 vs. 7,424.2 acres, $p < 0.01$). Cited operations were also more likely than non-cited operations to operate in more than one county (16.6% vs. 4.4%, $p < 0.001$). The most common crops among cited operations were strawberries (28.4% of operations), raisin grapes (16.6% of operations), and broccoli (16.6% of operations). These three crops were also more likely to be grown by cited than by non-cited operations.
6. Comparison of operations receiving a single notice of violation ($n=57$) with operations receiving multiple notices of violation ($n = 112$) showed that multiply-cited operations were more likely than singly-cited operations to farm in more than one county (18.8% vs. 12.3%, $p < 0.3$). This finding was not statistically significant.
7. Relative to labor expenses, operations with the following characteristics were more likely than others to receive TIPP citations: fruit and nut operations

(SIC 017x), for which the excess was most marked among berry producers (SIC 0171), small operations with less than \$100,000 annual farm cash receipts, and South Coast operations.

8. Based on Cal-OSHA files and state licensing files, approximately one in 14 licensed farm-labor contractors received a fine for serious OSHA violations on an average annual basis. In contrast, farm operators exhibited a much lower average annual rate, approximately one in 400.

POLICY RECOMMENDATIONS

Recommendation 1. The State Labor Commissioner and U S. Department of Labor should encourage and expand the TIPP model of interagency collaboration.

The TIPP model of interagency cooperation has demonstrated its effectiveness in the large percentage of TIPP reports that include multiple citations from different agencies. However, in some areas collaboration has been incomplete. For example, the database of TIPP reports for 1994 and subsequent years does not include health-and-safety violations, which are reported separately to the OSHA IMIS database.

The TIPP program should make a concerted effort to engage all agencies with regulatory responsibility in this effort. For example, the California Highway Patrol should be involved to address vehicular safety concerns, such as those related to transportation of field workers to and from work.

Increased interagency collaboration is helpful in maximizing the utility of existing resources. However, the program and the agricultural community would be likely to benefit by increases in resources devoted to preventive education and field enforcement activities. Participating staff should have sufficient command of Spanish to communicate with farmworkers.

Recommendation 2. Data collection procedures should be designed to facilitate timely data management and computer analysis suitable to the needs of participating agencies.

Data collection forms can be designed to facilitate data collection and accurate entry into computer systems for analysis. Design should include appropriate categories of violations. This process should be guided by considerations of how the data will be used. In particular, whether categories are broad and inclusive vs. narrow and precise will depend on how the data will be used from a regulatory standpoint. If it is important to distinguish different types of violations, then a greater number of narrower categories will be required.

Data forms can be prepared on optically readable forms. (These should be forms for which agency staff fill in the appropriate "bubbles"- rather than relying on handwriting recognition.) Scannable forms have a major advantage in that the completed form can simply be fed into a device that automatically reads the data and enters it into a computer for analysis. This process can save significant time, reduce data errors, and facilitate analysis and report writing. Efficiency could also be improved by immediate on-site entry into laptop computers; these could also hold useful databases (e.g., insurance coverage records and violation histories) for on-site field use.

The utility of reports could be greatly increased by including further descriptive information relevant for the participating agencies. In the IMIS system, for example, information on number of employees and union status are

included. Inclusion of descriptive information deemed relevant by the participating agencies would aid in understanding patterns of violation.

Comment: Improved utilization of computers would allow more timely review of data and facilitate planning of agency activities. For example, data we analyzed for this report showed an increased risk of violations among berry producers. However, more recent information, conveyed to us in personal communications by our reviewers during the preparation of this report, suggests that current compliance among strawberry producers is high. Improved use of computers with short turn-around time for data review would allow agencies to react to changes as they occur.

Recommendation 3. Develop standardized reports showing inspection activity.

Basic reports documenting prevalence and characteristics of specified infractions could be developed and to a large extent automated by computer. Although in-depth analyses may be subsequently required, the basic descriptive report could be developed relatively easily. In addition, if a computer-readable report form is developed, real-time data and reports could be available with little demand for administrative staff time devoted to their preparation. Rather, valuable staff time could be devoted to interpreting and developing policy, preventive, and educational measures. The design of the descriptive reports should be developed to meet the needs of the relevant agency. Customized versions of the report could be developed to meet the needs of the various participating agencies.

Recommendation 4. Target groups at increased risk for violation with educational programs to help them understand the law, resources for maintaining compliance, and enforcement efforts.

Based on these data, this group includes farm-labor contractors and larger farms and farmers operating in more than one county. Fruit- and nut-producing operations, in particular berry-producing operations, appear to be at higher risk than others. We caution, however, that identification of specific high-risk groups is subject to error because the data are not from a randomly selected, representative sample of agricultural operations.

Recommendation 5. Regularize follow-up of cited operations to assure subsequent compliance and determine impact of enforcement actions.

Follow-up for cited operations is an important part of maintaining subsequent compliance with regulatory requirements. Clearly, maintaining staff for this purpose represents a budgetary and personnel demand for agencies that may have insufficient resources. However, collaboration with partnered agencies offers potential efficiencies that may allow increased follow-up inspections.

Recommendation 6. Consider developing a program to provide unbiased information on the prevalence of infractions, utilizing a representative sample of local operations employing farmworkers directly or through contractors.

An inspection program utilizing an unbiased (i.e., representative) sample of local operations employing farmworkers directly or through contractors would allow agencies to determine how commonly or frequently specific infractions occur. This would provide a truer picture than currently available of infractions among operations and allow agencies to develop educational, preventive, and enforcement strategies based on a more realistic view of infractions within the industry.

In contrast, when information is based on complaints or leads, the resulting data represent a group of agricultural operations at high risk for violations; such a group is a biased sample- i.e., it is not representative of all agricultural operations. Similarly, operations that have not been inspected and cited may still have infractions of health-and-safety laws that have simply not been reported. Information on the true prevalence of specific infractions would be invaluable for developing policy and focusing resources, and information on true prevalence can only be obtained from a valid sampling system.

A valid, unbiased sampling system ideally would involve random sample selection from a complete list of area operations. Although various state agencies maintain lists of agricultural operations for their purposes (e.g., tax collection, crop production, etc.), the state does not maintain a comprehensive listing of operations utilizing farm labor. Developing and maintaining such a list requires ongoing commitment of resources.

We note that a program to provide information on the prevalence of infractions represents a departure from the original purpose of the TIPP program. Specifically, such a program would entail inspection of a random sample of operations, rather than focusing on those with complaints or at high risk for infractions. Whereas the original TIPP model garners support among employers because it lessens unfair competition from noncompliant operators, a random-inspection program intended to provide unbiased information on the prevalence of infractions may encounter difficulty in gaining support from employers. Whereas employers support the original TIPP model because it lessens unfair competition from noncompliant operators, employers may be less likely to support a random-inspection program intended to provide unbiased information on the prevalence of infractions.