

# Employer Interviews: Exploring Differences in Reporting Work Injuries and Illnesses in the Survey of Occupational Injuries and Illnesses and State Workers' Compensation Claims<sup>1</sup>

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## Abstract

Recent studies have cited discrepancies between the BLS Survey of Occupational Injuries and Illnesses (SOII) and State Workers' Compensation claims to support the assertion that the SOII undercounts injuries and illnesses among the American workforce. To explore reasons for possible discrepancies, we conduct qualitative interviews with employers responding to the SOII, in the Washington DC metropolitan area. Our in-person interviews focus on possible measurement errors associated with establishment record keeping systems and understanding of the survey request. Results suggest that the varying roles of respondents in SOII and WC reporting, records systems, understanding of reporting rules, survey timing, and injury and illness case complexity all may play a role in the discrepancies.

**Keywords:** establishment survey response model, measurement error, workplace injuries and illnesses, administrative records

## 1. Background

In this study, we explore possible reasons for differences in reports of days away from work (DAFW) injuries and illnesses in the annual Bureau of Labor Statistics (BLS) Survey of Occupational Injuries and Illnesses (SOII) and State Workers' Compensation (WC) claims data, the two major sources of occupational injury and illness records in the United States. Studies comparing the two data sources suggest that there are differences. For example, Boden and Ozonoff (2008), comparing six states, find that SOII captures from 51 to 76 percent of injuries and illnesses reported to SOII, WC, or both systems, and WC captures from 65 to 93 percent of injuries and illnesses reported to SOII, WC, or both systems (for a detailed review of the evidence on a SOII undercount of workplace injuries and illnesses, see Ruser, 2008). Since SOII respondents are requested to complete the survey using Occupational Safety and Health Administration (OSHA) injury and illness logs and supplement reports, our study covers OSHA, SOII, and WC reporting.

Research on establishment survey methods indicates that measurement error in a survey can be associated with the survey form, the respondent, and/or the record or information system used. There is sometimes a difference between a response provided and the true value for a survey item, and the difference – measurement error – often originates in the survey response process. For example, a survey form must convey the survey task, and the respondent must comprehend and perform the task. This requires knowledge of what is available in the records/information system, retrieval of the requested items, decisions on what information to report, and presentation of the items in

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<sup>1</sup> The views expressed here are those of the authors and do not necessarily represent the policies of the Bureau of Labor Statistics or the Social and Economic Sciences Research Center.

the required format (Edward and Cantor, 1991; Goldenberg, Butani, and Phipps, 1993). Thus, during the establishment survey response process, there is potential for error in comprehension, retrieval, judgment, and communication associated with the form, respondent, and records system.

Can this model of establishment survey response and measurement error be extended to administrative reporting systems, such as OSHA and WC? We think so, as the three major components of the model – forms, respondents, and records systems -- are present in the administrative records process, and the required reporting tasks are similar. In the case of OSHA and BLS, administrative records and survey data are intertwined. Employers are required, either by inclusion in high hazard industries or selection into SOII, to keep OSHA occupational injury and illness records for the establishment and use the records to complete SOII. While respondents for WC system may differ from those completing OSHA logs and SOII, WC claims reporting is based on injury and illness reporting forms and records systems that usually overlap with OSHA records.

Our study objectives are to better understand the OSHA/SOII and WC reporting processes, as well as identify potential errors at different stages of reporting. To do this, we conduct qualitative interviews with a small group of 2007 SOII respondents, focusing on OSHA, SOII, and WC forms and procedures, respondent understanding and decision making, and record system availability and content. We explore the various procedures SOII respondents and other actors follow when recording cases on the OSHA logs and SOII and reporting cases to state WC systems. One of our goals is to identify types of WC cases that might not be recorded on OSHA logs, and subsequently, the SOII. Another goal is to identify characteristics of establishments, respondents, and record keeping systems that might have an association with measurement error. A final goal of the study is the testing of a qualitative interview protocol for future use; studies with larger samples are planned in the states of Kentucky and Washington.

## 2. Study Methods

Early respondents to the 2007 SOII in a number of counties in and around the Washington D.C. area comprised the sample frame for our study (collection of 2007 data begins in January 2008 and ends in July 2008; approximately 45% of respondents complete the survey by the end of February 2008, our “early” respondents). Since our purposes were exploratory, we limited the frame to include respondents with at least one day away from work injury or illness case in 2007, so respondents would have had recent experience in recording an injury/illness in the OSHA log, and perhaps have had recent experience with WC reporting.

We planned for a diverse sample as possible,<sup>2</sup> with an emphasis on establishments with larger employment sizes, exposure to a variety of workplace hazards, and reported cases with a wide range of days away from work in the 2007 SOII. In addition, we wanted a significant number of companies with multiple locations. SOII program staff were assigned an industry/size class grouping, and asked to recruit at least one establishment in priority cells, which included the larger establishment size classes, and industry/size cells with the largest number of establishments.<sup>3</sup> They were also asked

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<sup>2</sup> Our goal was not random selection, given that most SOII establishments are small, single units, and have none to few reported days away from work cases. However, these establishments may contribute to undercounting (Oleinick and Zaidman, 2004), and we plan to include them in future interviews.

<sup>3</sup> The frame consisted of approximately 475 establishments, the industry and size class distribution are not provided due to data confidentiality. Staff used the list of establishments sorted randomly in the industry/size groupings and went down the list in sequential order as they called to request participation. Few potential respondents directly refused to participate.

to recruit several establishments that had a large number of DAFW cases and several multi-establishment firms.

The protocol for the interview was qualitative and semi-structured with many open-ended questions, allowing for respondents to elaborate on their procedures and interviewers to probe for further information to fill in gaps and gather more detail. While we attempted to collect similar information across interviews, the exploratory nature of the interview allowed respondents to elaborate on their specific experiences, so interviews were not standard in content. This type of exploratory interviewing was used to help identify patterns, themes, and possible explanations for our topics of interest.

Interview questions covered company background, respondent's background and roles, as well as the following subject areas: (1) the types of information, forms, and records that are used when reporting injuries and illnesses, (2) whether directions and definitions are understood, and (3) the difficulties respondents face in completing the forms and required tasks, including whether some types of injuries and illness are more difficult to report than others. We used the establishment survey methods and occupational safety and health literatures in developing interview questions. For example, in the area of company background, business longevity, size, industry, and multiple locations have been associated with various types of survey error. Injury and illness studies have identified company characteristics such as health benefits, worker tenure, union presence, and safety programs as factors in injury and illness reporting (Biddle and Roberts, 2003; Lakdawalla, Reville, and Seabury, 2005; Galizzi, Miesmaa, Punnett, and Slatin, 2009).

We conducted in-person interviews at 26 selected establishments.<sup>4</sup> Respondents were informed as to the voluntary nature of the study and that their responses would not be disclosed in identifiable form without their informed consent in accordance with the Confidential Information Protection and Statistical Efficiency Act of 2002 (Title 5 of Public Law 107-347) and other applicable Federal laws. The interviews averaged approximately 60 minutes.

### **3. Establishment and Respondent Characteristics**

**3.1 Establishment characteristics.** Table 1 shows the background characteristics of the 26 establishments – characteristics that originated from the BLS sample frame or were collected through the SOII survey. We covered most industry supersectors, included a higher proportion of establishments in the large size classes, and about 35 percent of those interviewed were part of a state multi-establishment company. Days away from work cases ranged from 1 to over 50, with half of the establishments having between 1 to 10 cases. In addition, a majority of establishments had job transfer/restriction days (DJTR) or other types of cases reported on the SOII.

Table 2 presents additional background characteristics collected during the interviews. We interviewed well-established “establishments” for this study, as they had all been in business for a long time, ranging from 12 to over 100 years.<sup>5</sup> As noted earlier, our sampling specifications leaned towards businesses with longevity -- large businesses, multi-establishments. In addition, older, well-established businesses were probably more likely to be early respondents and to agree to participate in the interviews, particularly those with a longer record of OSHA reporting, a stable reporting system in place, and a staff position for reporting.

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<sup>4</sup> Phipps conducted the interviews, with SOII program office and statistical methods division staff accompanying her on six of the interviews.

<sup>5</sup> Many companies indicated they had merged with other companies, but provided the years in business from the original inception of the company, not the merger.

Many of the establishments we interviewed indicated that they not only had multiple locations within a state (58%), but also across states (62%). The majority (54%) said their average worker tenure was three or more years. Approximately 42% of the establishments employed members from at least one union; in some establishments multiple unions were represented. All establishments we visited had “office” or “white-collar” type of occupations (managerial, administrative, and/or clerical), but only one had those types of occupations exclusively. In general, establishments had a very wide variety of occupations tied to the specific industries, e.g., healthcare (physicians, nurses, lab technicians, physical rehabilitation), construction (equipment operators, electricians, carpenters, laborers), utilities (substation employees, linesmen), transportation and warehousing (drivers, movers, mechanics, clerks), manufacturing (fabricators, assembly, laboratory), and retail (cashiers, clerks, sales, meatcutters, bakery). In addition to industry-specific occupations, large establishments with major facilities had employees in other occupational groups, e.g., food service, building and grounds maintenance, security, and transportation.

**Table 1. Company Demographics from BLS Frame and SOII Survey (N=26)**

<b>Characteristic</b>	<b>N</b>	<b>%</b>	<b>Characteristic</b>	<b>N</b>	<b>%</b>
<b>Employment Size</b>			<b>Multi-establishment</b>	9	35
11 – 49	1	4			
50 – 249	9	35	<b>DAFW cases</b>		
250 – 999	9	35	1-4	8	31
1000+	7	27	5-9	5	19
			10-14	7	27
<b>Industry</b>			15+	6	24
Utilities	2	8	<i>Mean</i>	11.6	
Construction	5	19	<i>Median</i>	9.5	
Manufacturing	2	8	<i>Range</i>	1 – 50+	
Wholesale	1	4			
Retail	5	19	<b>DJTR cases</b>	12	54
Transport/Warehousing	1	4			
Prof/Scientific/Tech	2	8	<b>Other cases</b>	22	85
Admin/Support/Waste	0	0			
Education	2	8	<b>Data collection mode</b>		
Healthcare/Soc Asst	4	15	Web	13	50
Arts/entertain/Rec	0	0	Electronic fillable form	13	50
Accom/Food	1	4			
Other Services	1	4			

As seen in Table 2, employees at interviewed establishments had access to health insurance programs, although in some establishments access was limited by position type, such as permanent versus temporary, hours worked, and job tenure. Five establishments said that their health insurance was required (unless an employee had proof of insurance through a partner) while for the remainder of establishments it was optional. Seven respondents did not know what percentage of employees participated in the health insurance program; in the other establishments the percentage participating ranged from 45% – 95%. While all establishments indicated they provided some type of sick leave benefits, it was often accrual-based and there were restrictions, such as waiting periods, minimum work hours, or eligibility based on employment type. About 46 percent of respondents said their company was self-insured for illnesses and injuries,

some up to a certain threshold and then an insurance company took over responsibility. Five establishments, approximately 19%, had an on-site medical clinic, all in very large establishments.

*Table 2. Company Demographics from Interviews (N=26)*

<b>Characteristic</b>	<b>N</b>	<b>%</b>	<b>Characteristic</b>	<b>N</b>	<b>%</b>
<b>Years in Business</b>			<b>Occupations</b>		
Mean	63		Wide range	25	96
Median	47		White collar only	1	4
Range	12– 100+				
			<b>Benefits Provided</b>		
<b>Locations</b>			Health Insurance	26	100
> 1 state location	15	58	Sick Leave	26	100
>1 US location	16	62			
			<b>Self insured for Injury/illness</b>	12	46
<b>Worker tenure</b>					
< 3 years	3	12	<b>On-Site MedicalClinic</b>	5	19
3 + years	14	54			
Don't Know	1	4	<b>Posts injury-free days</b>	5	19
Tenure is variable	8	31			
			<b>Safety awards or incentives</b>	9	35
<b>Any union members</b>	11	42			
			<b>OSHA recordkeeping required</b>	21	81

The survey methods literature suggests that the establishment environment is tied to the survey response process, and findings from the occupational health literature indicate that safety practices contribute to injury and illness underreporting by employees and managers. This led us to ask respondents about safety practices, including the use of awards and incentives, and about 19% of establishments posted injury-free days, while a larger percentage provided safety awards or incentives (35%). Seven of the nine establishments with awards or incentive programs used competitions where the rewards were gifts, lunches, gift cards, or money. One company had a drawing from employees with no injuries and accidents with a \$500 award, and later a \$2,000 grand drawing. Another had a program where claims had to be lower than that of the same quarter last year, and if so, establishment locations would get from \$500 - \$2,000 that was used for awards and gift cards. One respondent noted that he worked hard to find programs that would not penalize injury and illness reporting, using a national incentive program with a jackpot that had short, time frames—such as bi-weekly drawing for employees with no injuries who received a jackpot card and could be an instant prize winner. Several companies mentioned injury and illness numbers were tied to company performance. One establishment said that OSHA recordable cases were tied to company performance goals. Another establishment, which had recently merged with a large corporation, adopted the corporation's policy of having injuries below a certain lost time rate tied to the profit sharing plan.

**3.2 Respondent Characteristics.** The establishment survey response model suggests measurement error is associated with respondent knowledge, including experience, training, functional role, authority, and relationship to the record system (Edwards and Cantor, 1991). Table 3 shows the characteristics of establishment respondents. We interviewed an experienced group of respondents, with an average of five years in their current job. In addition, 12 respondents (46%) had been in the safety field or their

company longer than their tenure in the current job. Nearly three-quarters of respondents had formal training in the safety field and over half had on-the-job training. The formal training was carried out by many organizations, including: OSHA; Maryland Occupational Safety and Health (MOSH); National and Maryland Chesapeake safety councils; other professional associations, such as the industrial hygiene association; company lawyers; insurance companies, and third party administrators (TPA). In addition, several respondents had formal educational degrees in occupational or industrial safety, such as associate, bachelor and master degrees.

*Table 3. Respondent Characteristics from Interviews (N=26)*

<b>Characteristic</b>	<b>N</b>	<b>%</b>	<b>Characteristic</b>	<b>N</b>	<b>%</b>
<b>Gender</b>			<b>Completes SOII</b>	26	100
Female	17	65			
Male	9	35	<b>Completes SOII for multiple locations</b>	13	50
<b>Years in current job</b>			<b>Years completing SOII</b>		
Mean	6.7		Mean	7.8	
Median	5.0		Median	6.5	
Range	.5 - 28		Range	1 - 26	
<b>Job Title/Department</b>			<b>Responsible for OSHA record-keeping</b>	24	92
Safety/Environment	10	38			
HR/Employee Benefits	6	23	<b>Years completing OSHA</b>		
Occupational/Employee Health	4	15	Mean	8.3	
Insurance/Risk Mgmt/Claims	3	12	Median	8	
Office Mgmt, Admin, Clerical	3	12	Range	1 - 23	
<b>Formal Training</b>	19	73	<b>Someone assists respondent with OSHA</b>	10 (out of 23)	43
<b>On-the-Job Training</b>	14	54	<b>Completes WC paperwork</b>	15	58
<b>Injury/illness records maintained in office</b>	25	96%	<b>Someone assists respondent with WC</b>	11	73

Most of the company injury and illness records were maintained in the office of the people we interviewed. Our goal was to interview SOII respondents for this study, and we were successful as all interviewees completed the SOII, with an average of nearly eight years of SOII completion. About half of the respondents completed SOII reports for more than one company location. Over 90 percent of those interviewed were responsible for or oversaw the OSHA log, again with a long history of OSHA responsibility. Of the two respondents that were not responsible for the OSHA logs, one respondent indicated that company retail stores completed their OSHA logs and sent them to him at corporate

headquarters, and the other respondent said that their insurance company completed the log. About 43 percent of those responsible for the OSHA log had someone in their company assisting them.

Fewer SOII respondents said they completed WC paperwork, approximately 58 percent. Nearly three-quarters of that group had someone assisting them, primarily from the respondent's staff, but also from other company departments, or an insurer or TPA. Of the eleven respondents that were not responsible for WC paperwork, six said that someone else in the company was responsible, three put responsibility with their insurer or TPA, and two indicated a company store or field site was responsible. There were no discernable patterns by industry or employment size. The fact that most of the SOII respondents also are responsible for OSHA is likely to contribute to precision in reporting between OSHA and SOII and supports a recent BLS quality assurance study that found no systematic evidence that SOII undercounts cases recorded on the OSHA logs. However, the fact that OSHA/SOII respondents are less likely to complete WC paperwork is likely to contribute to differences in reporting between OSHA/SOII and WC.

**3.3 Summary.** Following our sampling specifications, we interviewed at establishments in most major industry groups, with a focus on larger employers and those with a range of DAFW cases. The establishments were "good" reporters to the 2007 SOII, reporting early in the field period by internet or electronic fillable form. They were well-established businesses with experienced respondents, and had a wide range of occupational types, with exposure to different workplace types of hazards. With such well-established companies and experienced respondents, we expect our interviews present a "best-case" scenario for OSHA and SOII reporting. For example, if we identify a reporting problem among this group, we would expect it to be even more of a problem in less-established companies and with less-experienced respondents.

#### **4. Injury and Illness Records and Recordkeeping Systems**

Establishment record keeping system complexity, as well as respondent knowledge of the records and system, are key factors in the establishment survey response process and potential sources of measurement error. Most OSHA/SOII respondents we interviewed coordinated the injury and illness reporting. All but two respondents reported that the establishment had written procedures in place to report injuries and illnesses, often with timelines, e.g., a requirement for employees or supervisors to report within hours or several days of the injury/illness. A majority (N=19) of respondents mentioned that they used an electronic system for reporting, including on-line company forms, electronic reporting to insurance companies, and commercial or internal software (including medical records software used by establishments with on-site clinics).

We found all establishments had a fairly similar protocol for reporting of and paperwork on accidents/injuries, with some exceptions as noted:

1. Employee reports injury/illness to supervisor/foreman/manager.
2. Supervisor reports injury to SOII respondent.
3. The employee, supervisor, and in some cases witnesses complete accident/injury/incident forms and/or a supervisor/manager completes a company first report. The forms are sent to the SOII respondent.
4. The respondent then files a report with the insurance company or TPA (N =18), or a corporate risk management or claims department (N = 6); some respondents noted their reports were populated by the information in the original accident/injury forms. In four (out of five) retail establishments, the employee or a store manager provided reports directly to a corporate department rather than our respondent.

5. The insurance company or TPA (N= 16) or corporate department (N =6) sends the required first report of injury or illness to the State WC agency. In most cases, the respondent said they did not “complete” the state first report, but the insurance company, TPA, or corporate department did so.

While there was a general pattern to the injury reporting process across establishments, reporting involved different actors and records, and it is easy to envision gaps and potential errors in recording and transferring injury and illness information. The complexity of injury and illness records system, as evidenced by both internal establishment and external records sources (insurance, TPA, and corporate records), is a complicating factor. Earlier, we saw that approximately 40 percent of this group of OSHA/SOII respondents did not complete WC paperwork. Here we see that the OSHA/SOII respondent’s role in WC recordkeeping is limited, as approximately 85% do not complete the state WC first report of worker injury and illness. The combination of complex records, WC responsibilities not directly linked to the OSHA/SOII respondent, and simply the existence of multiple actors in injury and illness reporting, is likely to increase error.

### **5. Respondent Comprehension of Guidelines and Forms**

Nearly all respondents were responsible for determining what injuries and illnesses were recordable on the OSHA logs, and subsequently, what should be included in SOII. All but two respondents said they used guidelines to determine recordability and complete the OSHA forms, including: OSHA form instructions (N=9), OSHA recordkeeping guidelines on the web (N=12), or OSHA definitions incorporated in their software (N=4). Even with the use of guidelines, and respondents’ extensive experience, our interviews uncovered confusion about who and what should be recorded as an injury or illness, as well as misunderstanding of instructions, all of which could be associated with OSHA/SOII and WC discrepancies. But we also found some experienced respondents very knowledgeable about guidelines and definitions.

**5.1 Temporary Help Worker Injuries and Illnesses.** One question in the interview focused on company use of temporary workers from a staffing agency. The majority of establishments we visited did use workers from temporary help agencies. However, the majority did not include them on their OSHA log, assuming that they were reported on the staffing company log. Per OSHA definitions, workers from temporary help agencies that receive day-to-day supervision from the contractee company and not the temporary help agency (which is the case with most temporary help agency workers) should be included on the OSHA log.

Of the 26 establishments, nearly three-quarters (N=19) said that they used temporary help workers. Of the 19 that used temporary help workers, ten indicated they would not include them on their OSHA log or SOII report, four said that they would include the workers; one indicated that the company included them sometimes, and four did not know what they would do. There were no distinct establishment characteristics associated with whether an establishment reported temporary help workers on the OSHA log or SOII report, including establishment size, industry, number of DAFW, self-insured status for injuries/illnesses, union representation, or use of safety campaigns. One exception was that establishments including temporary help agency workers were slightly more likely to have an on-site health clinic (three with a clinic among the four in total that reported the workers; two with a clinic out of ten in total that did not). It may be that establishments with clinics — usually the first line of treatment for workplace injuries and illnesses — are more likely to know and keep track of whether a worker is with the company or not, as it is likely a factor captured in the clinic paperwork/recordkeeping.



Similar to the establishment-level findings, there were few differences in respondent characteristics among those who did and did not report temporary help workers, for example, there was little difference in years on the job, years completing the OSHA log, job titles, or use of certain types of guidelines when completing forms. An exception was training, in that all four who included temporary employees had taken formal training during their career, offered through both state and private groups. Of those that did not include temporary employees, four of the ten respondents did not have such training (although the majority – 6 - did).

Some respondents who did not include temporary help workers provided further detail on temporary help worker injuries and illnesses, their discussion focusing on the responsibility of the temporary help company or an assumption that the OSHA log responsibility was tied to whoever provided workers' compensation insurance. For example, a warehousing company said that temporary help company employees were covered with their own company and had full coverage, and a retail company said they did not assume responsibility for temps in their contracts.

After we had completed a number of interviews and found temporary help agency employees were a problem area, we started asking more questions to get at the scope of the problem. As would be expected, temporary help workers were used most commonly for administrative office work, but there were construction, production, trade, and health jobs involved, i.e., workers facing a variety of hazards. Since temporary workers are more likely to be involved in accidents than permanent workers (Luria and Yagil, 2009), respondent confusion resulting in the exclusion of staffing agency workers is likely associated with measurement error. Underreporting in OSHA/SOII is likely as a WC claim could be filed for a temporary help agency worker, but the injury may not be recorded in OSHA/SOII. Given that our sample includes well-established businesses and experienced respondents, and the majority of them are not reporting correctly, this problem is likely compounded with newer businesses and less knowledgeable respondents.

**5.2 Other Contract Employee Injuries and Illnesses.** As respondents discussed temporary help agency workers, some mentioned other types of contract workers that they were unsure how to handle or thought were unlikely to be included on OSHA logs. For example, a respondent was unclear how to report injuries or illnesses for the establishment's contracted employees working on military bases. The respondent said to the best of his knowledge that military bases were required to keep their own illness and injury data. His establishment had many employees on military bases, and he was unsure if they should be included on his OSHA log. Several hospital respondents indicated that medical doctors on contract (e.g., attending, emergency department, radiology, anesthesiologists) would not be included on their log. Both respondents questioned whether they would be reported on *any* OSHA log. One respondent said that the hospital does not supervise them, thus, they are not on the hospital log, and that as contractors they are required to have their own workers' compensation insurance. She also said she has attempted but never been able to verify this or get clarity on how insurance or workplace injuries and illnesses are handled in contractual arrangements.

More research and clarification will be necessary to understand reporting of contractual arrangements other than temporary help agency workers, including who supervises the contract workers. This is a potential source of measurement error and especially a gray area in the health care industry. Nursing is a good example, as there are temporary help agencies that employ and provide nurses to health care agencies and institutions, and there are visiting nurse companies that have long-term contracts with health care agencies and institutions to provide nurses.

**5.3 Job Transfer Restricted Duty Cases.** Most establishments (N=22) reported that they have a program or provide alternatives on an individual basis for employees who cannot perform their regular job duties. All but one respondent in establishments that used job transfer or restriction recorded the number of days on the OSHA log (DJTR). Respondents were not always clear on what to do with a case that had both DAFW and DJTR. The OSHA 300 form directs the respondent to check one type of case based on the most serious outcome: DAFW, DJTR, or Other, and then enter the number of days. A majority of respondents said DAFW was always the most serious outcome (N = 15), which is correct, following OSHA rules. Of these 15 respondents, seven said they would include both the number of DAFW and DJTR, two said they would not include DJTR, and six did not specify what they would do. Of the remaining 11 respondents, five said that they were not sure, did not know, or did not use JTR. Another five said they would check both types of cases and report the number of days for both. One respondent indicated she would decide based on the severity of the DAFW or DJTR: if a case had 20 days of DJTR and 2 DAFW, she would select DJTR as the case type. The latter example could result in a DAFW case being erroneously classified on the OSHA log and not reported as DAFW on the SOII survey form (and thus, not included in WC-SOII DAFW match studies).

**5.4 Cases included in OSHA/SOII or WC.** Nearly all respondents said that they included eligible OSHA log cases on the SOII and were aware of SOII definitions, such as the inclusion of cases with one or more DAFW. We also asked respondents if there were cases that would show up in WC, but not OSHA or SOII. One experienced respondent from a large company reported a number of cases of when injuries/illnesses are covered under WC but are not OSHA recordable: (1) an accident commuting to work, (2) accidents or illnesses that occur when an employee is out of the office as they are temporarily domiciled (examples included off-site conferences, company picnics), (3) employees with a long work shift having an accident commuting home. These types of cases would not be included in SOII but would be in WC. One respondent noted that state social services pay the establishment to train non-employees and they supervise them, so they include them on OSHA logs and SOII, and accidents and illnesses would go through their TPA, but they would not show in WC.

## **6. Respondent Retrieval of Injury and Illness Data**

The establishment records system and respondent comprehension of the information request comprise the first two steps of the establishment survey response process, a third and critical step is the retrieval of information, including the timing of records retrieval. Both OSHA and WC records are kept over time and are dynamic, while SOII is a once a year request. The changing nature of OSHA and WC records may be a problem for SOII and associated with survey error.

**6.1 Timing of OSHA Log Completion.** Most respondents said that they had no difficulty keeping the log up-to-date; however, there was variation in when they recorded injuries and illnesses. Responses included: immediately, within a few days, right after injury, daily, within 24-72 hours, monthly, and one respondent completed the log at the end of the year. While no respondents said that they waited until cases were complete before recording them, there were also comments indicating lag times, such as waiting for reports from loss prevention and supervisors, and waiting for doctors' reports to know if injuries were recordable. While most respondents said they had no problem reporting cases that occurred late in the calendar year (N=19), three respondents said that December cases can be reported late. Two respondents said that they could have late cases in general; one of these respondents said that they would update the log with late cases, but not the SOII.

**6.2 OSHA Cases Unknown at the Time of SOII Completion.** We also asked respondents about injury and illnesses cases that might be unknown to them at the time they completed the SOII. Thirteen respondents (half) said that they did not have any unknown cases. Of the remaining 13 establishments, nearly all provided examples, but indicated they were not frequent occurrences: ergonomic/carpal tunnel cases, late or past the December closing (one respondent who completed the SOII for multiple company establishments estimated approximately 50 late cases per year company-wide), cases where the employee goes to state WC first and the company does not know, bloody pocket cases where the employee grins and bears it and they have a worse problem six months later, cases in which an employee goes to a private physician as opposed to employee health, and cases involving medical doctors with needle sticks who use his or her own sick time and then file a WC claim and are paid back.

We asked specifically about cumulative trauma injuries and illnesses, which we considered more likely to be unknown or unreported over a longer time frame. All but one of the respondents said that they had had cumulative trauma cases. Respondents indicated that if an employee reported the injury/illness to them, they always included the case in the OSHA log, and also SOII, if DAFW were involved. But a number mentioned that employees do not always report these types of cases and that cumulative trauma cases were sometimes reported to them at a late date, as an employee did not realize they had an injury/illness like carpal tunnel immediately. Three respondents noted that they would put such cases on the log, perhaps in the following year, if they were reported by an employee. One case a respondent discussed involved an employee who called after leaving the company. The employee's current company said it was the responsibility of the respondent's company, and the respondent's company did pay for hand surgery. Since the respondent was not on their payroll, it was not reported as a DAFW, but a medical only case and was never included on the OSHA log, indicating the complexity of these types of cases on the recording of injuries and illnesses. We asked respondents a question on what date they would use for the date of injury on cumulative trauma cases. Many respondents said this was a difficult call, and we got a lot of variety in answers, which have implications for the matching of SOII and WC cases. The most commonly reported was the date that the employee provided to them. Other dates included: a guess, date of the injury or event, diagnosis date, date of first symptoms, and date of first doctor visit.

**6.3 Late WC Claims.** Most respondents had some familiarity with WC reporting, although 40% were not responsible for the actual WC paperwork. We asked a question on whether the establishment had cases in which an employee, physician, or attorney would file a WC claim first and the establishment respondent would find out about it at a later date. The majority of respondents (N= 16) said that this did not happen. Of the ten that said they had claims filed by others most indicated that employees filed the claims. All but two of the ten respondents described specific types of cases: cases arising after termination involving soft tissue and repetitive stress injuries/illnesses, when employees filed WC claims on their own, past employee injuries that the establishment as the next employer may have to partly cover, and when lawyers filed a WC claim on behalf of a present or past employee. Respondents indicated that most of these would not have been recorded on the OSHA log, and thus, not in SOII.

**6.4 Amendments to the OSHA Log.** The most common type of amendment that respondents made to the OSHA logs was adjusting the DAFW and DJTR. Another reason for log amendment was the change of a case from first aid or light duty to DAFW (N = 2). Six respondents said they did not amend cases: two noted their insurance company handled the amendments, and three said they didn't have changes. We asked respondents if they ever recorded a case on the log but later removed it because the case was not recordable. The majority of respondents said they did not take cases off the log (N = 16),

and one respondent said she did not know, as the insurer completed the log. Several of the respondents who did not take cases off the log said they were more likely to add new cases. Of the nine respondents that said they took cases off a log, various reasons were mentioned: when the state or insurance company ruled the injury was not work related; a carpal tunnel case the insurance company investigated and found was preexisting; hearing cases when retesting showing no shift, or age adjustment; and eye injuries based on strict OSHA recordability criteria (a prescription is required for a penetrating eye injury). The variation in respondent practices in amending cases has implications for WC and SOII reporting differences, in underreporting (e.g., late cases) and in some cases, possible overreporting in SOII.

**6.5 WC Contested and Denied Cases: Timing and Judgment.** Entwined with the timing of records retrieval is another step in the establishment response process – that of judging the adequacy of responses, which proved variable in the reporting of complex WC cases. Twenty of our interviewees said that they had had injury and illnesses cases that were contested and/or denied by either the insurer or WC system. Respondents reported varying practices on recording contested or denied WC claims on the OSHA log and SOII. Nine respondents said they would include contested or denied cases on the log; several of these respondents were adamant that all cases should be left on the OSHA log. Seven respondents said they would take the case off the log if it were determined not to be work related; three of the seven specified they would take it off at a late stage after all decisions had been made and finalized (one of these respondents said that he would include it “up to the point when the case was denied; if denied immediately, probably wouldn't record it.”) One of the seven respondents said that state-denied cases should be left on logs, but their retail stores had frustrations with that, and the company did kick out cases that were not work-related. Two respondents said they would take a case off the log if it involved preexisting conditions, and three respondents said they would take off all state-denied cases. One respondent mentioned that denied cases that are a violation of safety rules are not compensable and would be taken off the log. Again, variation in respondent reporting of contested and denied cases is likely to contribute to SOII and WC differences.

## 7. Communication

The establishment response model identifies communication of the response as a final step in the response process. As with household surveys, respondents may adjust responses due to social desirability reasons, and over- or under-report behaviors. In an establishment survey, this step might involve the respondent's own perception of establishment appearance, or factors in the establishment environment that influence the respondent (Edwards and Cantor, 1991).

We did not explore in any detail company pressures to keep OSHA recordables low. However, a number of incentive programs involved having injuries and illnesses at or below certain rates, and several respondents noted these pressures. In addition, OSHA recordable case rates are sometimes required as part of safety qualifications for contracts, probably adding pressures to keep rates low. One respondent was particularly candid in discussing conversations “after hours” at conferences, when representatives from *other* companies were relating their experiences. From these conversations, he suggested that the focus on management performance as tied to OSHA recordables was likely a factor in OSHA/SOII and WC differences in some companies. He said that due to management and worker performance goals, persons in charge did not want an OSHA recordable case on the record, but were willing to take it as a WC case. He also mentioned listening to conversations about how OSHA logs were fixed to meet performance goals.

## 8. Discussion and Summary

The research described in this report is qualitative in nature. Rather than attempt to make generalizations about a population of interest, the primary objectives of this research were to identify and better understand potential measurement error issues. Because the establishments that were selected were early responders to the 2007 SOII, responded electronically (using either the Internet or a fillable electronic form), and agreed to participate in this research, they are not likely to be representative of the population of SOII respondents. Instead, it is more likely they represent the sub-population of cooperative responders. Nonetheless, if we are able to identify problems within this population, it is highly likely that these problems will generalize to the population of establishments.

Complexities associated with the reporting process may contribute to differences in the data, but with our small sample, it was hard to discern strong patterns. In any reporting situation, having more than one person, department, or organization involved in the records keeping process is likely to contribute to measurement error. Examples of complexities we found include: different respondents and locations for OSHA/SOII and WC paperwork and reporting, and different organizations for OSHA/SOII and WC reporting, such as insurance companies and TPAs responsible for WC. The complexities are usually compounded in multi-establishment companies, and also in situations where more than one company was potentially responsible for an injury or illness. One would expect that respondent job tenure and training could factor into reporting problems; anecdotally, some single establishment respondents with minimal training seemed less knowledgeable about OSHA recordkeeping than multi-establishment respondents, and we will continue to explore the role of experience and training in future interviews.

During our exploratory interviews, we found a number of possible reasons for differences between OSHA/SOII and WC records, and many of the issues that came up were likely to be associated with an undercount in OSHA and SOII. Given the small number of interviews we conducted, we cannot be certain about many issues. However, several reporting problems were common in our interviews. A number of problems were associated with respondent comprehension issues regarding reporting guidelines, including temporary help company worker omissions. Temporary help worker omissions did not have any clear-cut establishment or respondent characteristics associated with them; most respondents were simply unaware that they should be included on the OSHA log. In tandem with temporary help agency employees, respondents voiced confusion about the reporting of contract employee injuries and illnesses.

Another problem had to do with the timing of records retrieval -- injuries and illnesses that were reported by establishments or employees at a late time point, including after an employee separates from an establishment. Half of the establishments interviewed indicated there are unknown or late cases that may be left off the SOII. Late reporting had a number of potential case and other characteristics including: injuries and illnesses that have a longer latency period (such as cumulative trauma injuries); injuries and illnesses that employees are reluctant to report immediately; use of private physicians so paperwork may lag; decentralized reporting in multi-establishments, particularly in situations where the SOII respondent is at the larger corporation and not the specific establishment; cases when employees hire lawyers and do not report to the establishment, and casing arising after termination. "Late" cases may or may not be recorded on an OSHA log at a subsequent date, and are less likely to be captured by SOII within its fixed field period.

There were inconsistencies in respondent judgment on whether to remove or leave cases on OSHA logs (and in turn, SOII) when they are contested and/or denied by

the insurance company or the state WC system, which have implications for reporting differences. In addition, there are legitimate differences between what is compensable under WC and what is recordable for OSHA, again which may contribute to differences in SOII and WC data. They may include: accidents commuting to or from work, and accidents that occur when an employee is out of the office as they are temporarily domiciled.

We did not explore in any detail company pressures to keep OSHA recordables low. However, respondents noted pressures associated with incentive programs that encourage or require injuries and illnesses at or below certain rates. One respondent suggested that the focus on management performance as tied to OSHA recordables was likely a factor in OSHA/SOII and WC differences in some companies.

## 9. Future Interviews

Plans are underway to conduct interviews in several other states in late 2010 and 2011, including Kentucky and Washington. We have used the findings from this study to revise our interviewing protocol, and in addition, we have a substantially different sampling strategy and larger sample sizes. In both states, linked SOII and WC records will be used in sampling, so we will select establishments that have few or many differences in the number of SOII and WC injury and illness cases and compare interview results. We will continue to examine the role of records systems, company and respondent background, and components of the response model, such as retrieval and communication issues.

## Bibliography

- Azaroff LS, Levenstein C, Wegman DH. (2002). "Occupational injury and illness surveillance: Conceptual filters explain underreporting." *Am Jnl Pub Health* 92(9):1421-1429.
- Biddle, Jeff and Karen Roberts (2003). "Claiming Behavior in Workers' Compensation." *Journal of Risk and Insurance* 70 (4): 759-780.
- Boden, Leslie I., and Al Ozonoff (2008). "Capture-Recapture Estimates of Non Fatal Workplace Injuries and Illnesses." *Annals of Epidemiology* 18 (6): 500-506.
- Edwards, W. S. and D. Cantor. (1991). "Toward a Response Model in Establishment Surveys." In P. Biemer et al. (eds.), *Measurement Errors in Surveys*. New York: Wiley.
- Galizzi, Monica, Petra Miesmaa, Laura Punnett, Craig Slatin, and Phase In Health Care Research Team. (2010). "Injured Workers' Underreporting in the Health Care Industry: An Analysis Using Quantitative, Qualitative, and Observational Data." *Industrial Relations* 49 (1): 22-43.
- Goldenberg, Karen L., Shail Butani, and Polly Phipps (1993). "Response Analysis Surveys for Assessing Response Errors in Establishment Surveys," *Proceedings of the International Conference on Establishment Surveys*. Alexandria, VA: American Statistical Association. <http://www.bls.gov/osmr/pdf/st930240.pdf>.
- Lakdawalla, Darius, Robert Reville, and Seth Seabury (2005). "How Does Health Insurance Affect Workers' Compensation Filing?" Rand Working Paper (WR-205-1-ICJ). Santa Monica, CA: Rand.
- Luria, Gil and Dana Yagil. 2010. "Safety perception referents of permanent and temporary employees: safety climate boundaries in the industrial workplace." *Accident Analysis and Prevention* 42: 1423-1430.
- Nestoriak, Nicole and Brooks Pierce (2009). "Comparing Workers' Compensation claims with establishments' responses to the SOII." *Monthly Labor Review* (May): 57-63.
- Oleinick, Arthur and Brian Zaidman (2004). "Methodological Issues in the Use of Workers' Compensation Databases for the Study of Work Injuries with Days Away

- from Work. Sensitivity of Case Ascertainment.” *American Journal of Industrial Medicine* 45: 260-274.
- Rosenman KD, A Kalush, MJ Reilly, JC Gardiner, M Reeves, Z Luo, “How Much Work-Related Injury and Illness is Missed by the Current National Surveillance System?” *Journal of Occupational and Environmental Medicine*, April 2006, 48(4): 357-365.
- Ruser, John W (2008). “Examining Evidence on Whether BLS Undercounts Workplace Injuries and Illnesses.” *Monthly Labor Review* (August): 20-32.
- Webb, G.R., S. Redman, C. Wilkinson, and R.W. Sanson-Fisher (1989). “Filtering Effects in Reporting Work Injuries.” *Accid Analy & Prev* 21: 115-123.