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How Many Injured Workers Do Not File Claims for Workers' Compensation Benefits?

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Background *Anecdotal evidence suggests that there are injured workers who do not file for workers' compensation (WC). Several recent studies support this, and we aim to quantify the extent of under-reporting.*
Methods *A Canadian survey asked about work injuries in the previous year, and several questions established eligibility for WC and whether a claim had been filed. The proportion of eligible injuries with a claim was estimated. Logistic regression identified predictors of claim submission.*
Results *Of 2,500 respondents, 143 had incurred an eligible injury, of whom 57 (40%, 95% CI 32–48%) had not filed a WC claim. Severity of injury was the strongest predictor of not claiming.*
Conclusions *Survey respondents reported a substantial degree of under-claiming of WC benefits, contrasting with public attention on fraudulent over-claiming. Policy makers should ensure that all relevant parties are aware of their obligations to report work injuries. This will create a more accurate picture of work safety.* Am. J. Ind. Med. 42:467–473, 2002. *© 2002 Wiley-Liss, Inc.*

KEY WORDS: workers' compensation; work injuries; reporting; survey; severity; claim; behavior

INTRODUCTION

Rates of injury based on workers' compensation (WC) data are commonly used to measure safety performance in individual workplaces and overall rates across jurisdictions are used to assess trends, or changes following new legislation or policy. The primary purpose of WC is to provide some wage replacement and reimbursement of medical costs for those injured at work. It is based on a compromise nearly 100 years ago in which the right to sue employers under tort law was eliminated in favor of a no-fault system of compensation. Access to such compensation continues to be crucial in providing fair treatment for injured workers.

Yet there is evidence of under-reporting of work injuries. Although this issue has long been recognized, most quantitative evidence is recent. Morse et al. [1998] conducted a telephone survey in Connecticut. Out of 292 self-reported or doctor-defined work-related chronic upper extremity pain, only just over 10% had filed for WC. Even with a more rigorous case definition just 21% had filed.

Biddle et al. [1998] identified 30,000 known or suspected cases of occupational disease in Michigan, where employers, hospitals, clinics, and physicians are required by law to report such cases (although indirect evidence shows compliance is far from complete). They found that 55% did not file for wage replacement and only 9% could be labeled as definitely having filed. While filing in this state is only done after a week off work, the authors concluded it is likely that many eligible workers did not file a claim. Women, older

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workers, and those in firms with less than 500 employees were more likely to file a claim; and the proportions filing also varied by diagnosis and industry.

The same authors and their colleagues [Rosenman et al., 2000] examined another group of workers in Michigan diagnosed with work-related musculoskeletal disease. Only 25% of the 1,598 workers had filed a claim. Major reasons given by workers for not filing were: injury not serious enough (59%); did not expect to miss work (58%); expected to miss work but knew they would receive sick-leave or short term disability from their employer (28%); medical expenses covered by other insurance (36%); and did not think injury was work-related (20%). Predictors of filing based on the final logistic regression model were severity of the disorder, longer duration of employment, lower annual income, and worker dissatisfaction with co-workers, as well as poorer health status, activity restrictions, and type of primary treatment physician.

A further study in Michigan [Biddle and Roberts, 2001] again used the register of occupational diseases to identify and interview 1,598 workers with conditions of the shoulder, back, wrist, or hand. Of those definitely eligible for WC (since they missed more than 7 days of work), 72% reported a claim, with 58% claiming wage loss benefits. The most important determinants of the decision to file a claim were factors related to the workers' health and the severity of the reported condition. Claim behavior also varied significantly from workplace to workplace.

Pransky et al. [1999] conducted a survey in three plants. Most respondents (85%) reported experiencing work-related symptoms, 50% had persistent work-related problems, and 30% either lost time or had to do modified work. Yet, less than 5% had officially ''reported'' a work-related injury in the previous year. The authors attributed at least some of the under-reporting to the safety incentives of the plant: some staff's evaluations were ''in part based on achieving recordable injury goals,'' so there was ''management pressure to avoid recording injuries.'' Among the reasons that workers gave for not reporting injuries were fear of reprisal, a desire not to lose their usual job, and a belief that pain was a normal consequence of work or ageing.

In Canada, a study in 1989 conducted ''634 random telephone interviews'' with adults in Ontario [Vector Public Education, Inc., 1989]. The response rate was not stated. One question asked: ''Have you ever had an accident or injury on the job that was reported to the employer's doctor or nurse but was not reported to the WC board?'' Fifty respondents answered 'yes' (7.9%). While this shows that a non-negligible proportion of workers have not submitted WC claims, unfortunately the questions in the survey do not allow estimation of the proportion of eligible injuries with no claim made. When asked why they did not report the injury, 18 reported it was easier to go on sick leave than wait for WC, eight stated that there was pressure from supervisors or management not to report injuries, and two reported such pressure from other employees or the union.

Another study in Ontario, the Workplace Accident Reporting Practices Study [Research and Evaluation Branch, 1992], conducted telephone interviews with 200 workers in industries covered by WC. Eleven reported at least one workplace accident in the previous year, with seven stating the injury led to lost time. Of these seven, one worker apparently did not submit a WC claim. Of the four non-lost-time cases, one ''could have ended up as a WCB claim.'' Experience rating of employers' WC premiums was introduced over several years in the early 1990s, so pressure from employers not to submit claims could have increased since these two studies.

Quinlan and Mayhew [1999] reviewing the literature found that those in ''precarious'' employment were typically less aware of WC and the benefits provided. Thus we might expect such workers to be less likely to submit a claim. Below we use temporary employment and multiple job holding as indicators of precarious jobs. Quinlan and Mayhew also referred to an Australian Bureau of Statistics study of 8,800 employed people in New South Wales. Of the 8.3% reporting an injury in the previous year, 53% had not claimed for WC benefits.

Most of the reports cited above do not yield a broad estimate of under-reporting of all illnesses and injuries—they are limited to particular industries or limited to particular health conditions. As well, they do not generally establish that an injury or illness meets criteria for worker's compensation eligibility (e.g., was the condition serious enough?). Yet anecdotal evidence of under-reporting abounds, in addition to the substantive evidence above. Thus, Ehrenreich [2001] reports the case of a young woman working for a house-cleaning service. Despite an apparent fracture of her ankle, she continued to work, stating that she had missed several days' work in the previous few weeks.

A number of factors could be related to the submission of claims. Workers who are unionized may feel less vulnerable to reprisals if they submit a claim and they may be provided with information on WC or help in claiming by their union. In the US, Hirsch et al. [1997] found that unionized workers were indeed more likely to receive WC. Their analysis took account of various factors, including industry, which they argued was a surrogate for actual injuries. Temporary workers especially may worry about job security should they file a claim. As well, when an employer provides a sickness and disability plan, we might expect that workers and employers find it easier to use the plan rather than submit a WC claim, as found in the reports noted above.

Given the findings of Quinlan and Mayhew, and the increasing proportion of the workforce in non-standard employment, concerns about under-claiming are accentuated. As well, in Ontario, experience rating of companies based on their WC record was introduced about a decade ago.

This has raised concerns that management, to minimize WC premiums, pressures workers not to report injuries, even if only indirectly via incentives for low injury rates.

Any under-claiming generates important policy issues, since WC systems should be providing fair and equitable access to compensation for injured workers. Given the limitations of previous studies and the changing nature of employment relationships over the last decade or more, it is timely to establish the extent of under-reporting and to identify its determinants. The shift away from the ''standard'' full-time continuous job is evident in Canada, where in 2000, 4.8% of total employment was multiple job holding, 12.5% of all employees were temporary, and self-employment accounted for 16% of all employment. Typically, the self-employed do not have WC coverage, and many may have no other insurance in the event of work injury, leaving a gap in the social security net for a sizeable minority of the workforce.

We report on a survey of changing employment relationships, in which we asked questions that could explore these issues. In particular, the results allow us to estimate the overall extent of failure to claim WC benefits among eligible injured workers.

The survey was conducted across Canada. Each province has its own WC board, and the underlying principles of WC are similar to those in US jurisdictions although administrative policies and procedures may differ. In all provinces, there is a public single-payer system responsible to the provincial government.

METHODS

The questionnaire was developed by the Canadian Policy Research Networks for its Changing Employment Relationships Survey [Lowe and Schellenberg, 2001]. The telephone interviewing was conducted by trained, experienced staff from an established survey company (EKOS Research Associates). To ensure national representativeness, quotas were assigned by region, based on provincial populations, with an overall sample of 2,500 respondents. The household-based sample frame was drawn randomly from a database of all telephone directories in Canada, supplemented by randomly generated telephone numbers to ensure an equal probability of calling unlisted numbers. Households were called eight times before a number was ''retired'' in the absence of a response. Interviews were conducted in English or French (Canada's two official languages), which excluded some immigrants without sufficient fluency in either.

The data were reviewed against the population distribution of province, age, gender, and industry, using Statistics Canada's Labour Force Survey. To correct for minor discrepancies, data are weighted for gender and age.

Questions in the survey covered a number of areas, including the workplace and labor market context and individual socio-demographic characteristics. Notably for this report, we asked if respondents had experienced a work injury during the previous 12 months. Three subsequent questions asked if the injury required time off work, modified work, or medical treatment. We then asked if the injury occurred on the current job, and finally whether a WC claim had been submitted.

To determine the subgroup for analysis in this study, we had to identify those injured workers who should definitely have had WC coverage, and whose injury qualified for submission of a claim. From the respondents who reported a work injury, we first limited the subgroup to those in paid employment, since self-employed individuals are not obliged to pay WC premiums (see Table I). The survey confirmed that the injury had occurred in the current job, since not all industries must pay WC premiums. We further limited the subgroup to those who reported that their injury required modified work, medical treatment, or lost time, since at least one of those is required before a claim is submitted. Finally, we confirmed that the industry in which the individual was working had compulsory WC coverage using a listing of WC premiums by province and industry [AWCBC, 2001]. Coverage varies by province, for example, in Ontario the financial sector is not automatically covered, nor are livestock farms in Nova Scotia and rehabilitation hospitals for the physically or mentally disabled in Alberta.

We identified variables that we believed might be determinants of claim submission, as well as other socio-demographic variables (see Table II). These were variables from the questionnaire that would likely not have been affected by the injury. For example, perceptions of the quality of the job may be influenced by an injury, as no doubt would be the perception of whether the workplace is safe, so both were excluded.

Initial analyses involved estimating the overall proportion of those eligible who submitted a WC claim. This was followed by cross-tabulation of this variable with the others selected for our analyses. We then carried out logistic regression analyses using the backward elimination procedure. The dependent variable was whether a claim had been submitted,

TABLE I. Establishment of Sample for Analysis

	Number (%)
Total number of respondents	2,500
Reported workplace injury	255 (100)
Paid employee	218 (85)
Injury in current job	190 (75)
Injury serious enough to make WC[a] claim	154 (60)
Industry compulsorily covered by WC	143 (56)

Numbers show sample with successive application of inclusion criteria.
[a]WC, workers' compensation.

TABLE II. Cross-Tabulations of Claim Submission and Other Variables

Variable	Claim submitted: Yes	Claim submitted: No (%)	*P* value
Gender			
Male	54	37 (41%)	0.80
Female	32	20 (38%)	
Number employed at location			
<25	18	17 (49%)	0.26
25–99	18	12 (40%)	
100–499	27	14 (34%)	
500+	19	6 (24%)	
Job status			
Permanent	74	53 (42%)	0.40
Temporary	10	4 (29%)	
Injury needed			
Medical attention			
Yes	80	53 (40%)	0.99
No	6	4 (40%)	
Time off			
Yes	71	31 (30%)	< 0.001
No	15	26 (63%)	
Change in job assignment			
Yes	15	10 (40%)	0.99
No	71	47 (40%)	
Marital status			
Married/common-law	43	29 (40%)	0.99
Single-never married	32	21 (40%)	
Other	10	7 (41%)	
Age (years)			
< 25	16	14 (47%)	0.65
25–44	47	29 (38%)	
45+	21	14 (40%)	
Number of dependent children at home			
0	45	38 (46%)	0.20
1	14	7 (33%)	
2	19	12 (39%)	
3+	8	1 (11%)	
Highest level of education			
Less than high school	7	7 (50%)	0.45
High school/SPS	32	22 (41%)	
Certificate/diploma	36	17 (32%)	
Bachelor's degree	6	8 (57%)	
Graduate degree	4	3 (43%)	
Region of country			
British Columbia	15	4 (21%)	0.01
Alberta	4	10 (71%)	
Saskatchewan/Manitoba	6	4 (40%)	
Ontario	33	30 (48%)	
Quebec	17	8 (32%)	
Atlantic Provinces	10	1 (9%)	
Job type			
Full-time	76	53 (41%)	0.36
Part-time	10	4 (29%)	
Union member			
Yes	50	29 (37%)	0.35
No	35	28 (44%)	
Paid sick leave plan			
Yes	50	34 (40%)	0.89
No	34	22 (39%)	
Multiple job holder			
Yes (2 + jobs)	9	4 (31%)	0.48
No	77	53 (41%)	
Shift type			
Regular days	48	33 (41%)	0.81
Other	38	24 (38%)	

Using weighted data. Totals do not all add to 143 because of missing data.

and the independent variables were those noted above. Given the somewhat exploratory nature of this analysis, we used the program's default value of 0.1 as the "*P*-to-remove" rather than the more standard value of 0.05. All analyses were carried out using SPSS for Windows (Version 9.0), and data were weighted as noted above.

RESULTS

The initial sample contained 17,361 phone numbers. Three thousand one hundred and twenty eight had to be eliminated because the numbers were not in service, were business fax or modems, or were duplicates. This left a functional sample of 14,233. The response rate from the functional sample was 39.2% (the 2,500 who completed interviews and the 3,083 who were willing, but did not meet inclusion criteria).

Over 11% of paid employees reported a work injury in the previous year. Among self-employed, who made up 15% of our sample, nearly 10% reported such an injury. The subgroup of paid employees with injuries was gradually reduced by applying criteria for WC eligibility (Table I). The final group comprised 143 individuals.

Overall, 40% of those eligible had not submitted a claim (95% CI 32–48%). Cross-tabulations (Table II) showed that this did not vary according to whether injuries required medical attention or a change in job assignment, but was significantly lower when injuries required time off work versus no time off (31 vs. 63%, $X^2 = 12.7$ on 1 d.f., $P < 0.001$).

Those who were not members of a union were less likely to submit a claim than were union members, but the difference was not significant (44 vs. 37%, $X^2 = 0.87$ on 1 d.f., $P = 0.35$). There was minimal difference in proportions filing claims among those for whom the company had a paid sickness plan versus those who did not. Non-filing for claims varied significantly by region of the country—the lowest proportion was seen in Atlantic Canada (1/11); the highest proportion in Alberta (10/14). Data for these and other variables are shown in Table II.

The final logistic regression model is shown in Table III. The less ''serious'' the injury, the less likely a claim was to be submitted. Single jobholders were much less likely to submit a claim (OR = 0.16 95% CI 0.03–0.98), although, since there were only 13 multiple jobholders overall, the CI barely excludes 1. Likewise, the odds ratio for non-submission of a claim by temporary workers was 0.14 (95% CI 0.013–1.48), but this was based on only 10 such workers and was not significant at the 5% level. (It was retained in the equation since we used a *P*-to-remove of 0.1.)

The ranking of non-submission rates by province changed slightly in the multi-variable analysis (compared to the simple cross-tabulations). Ontario, the province with the most data was used as the reference category. The rate was higher only in the prairie provinces (Manitoba and Saskatchewan) and lower in all others. The odds were much lower in the Atlantic provinces (0.06), but the confidence interval was again very wide (95% CI 0.005–0.64).

TABLE III. Final Logistic Regression Model With Non-Claim as Outcome

Variable	Category	OR	95% CI
Jobs held			
	Single	1	—
	Multiple	0.16	0.03, 0.98
Region			
	Ontario	1	—
	British Columbia	0.36	0.10, 1.34
	Alberta	0.70	0.12, 4.10
	Saskatchewan/Manitoba	1.25	0.20, 7.76
	Quebec	0.55	0.18, 1.70
	Atlantic Provinces	0.06	0.005, 0.64
"Severity" index*			
	1	1	—
	2	0.25	0.09, 0.65
	3	0.20	0.05, 0.84
Job status			
	Permanent	1	—
	Temporary	0.14	0.013, 1.48

Hosmer–Lemeshow goodness-of-fit $X^2 = 3.12$ on 7 d.f., $P = 0.87$. Model is based on backward elimination procedure using *P*-to-remove of 0.10.
*Index, number of positive responses to questions asking if injury required medical attention, time off work or modified work.

DISCUSSION

Overall, of those in the sample suffering an injury, eligible to receive WC, and working in an industry with compulsory coverage, 40% did not submit a WC claim. While this represents substantial under-reporting, it is if anything lower than the proportions observed in other, non-Canadian reports (see Introduction), although they did not always establish eligibility for WC.

Unfortunately, we cannot determine if the under-claiming of benefits has changed over the past decade, a trend that could be linked to the decline in WC rates over this period. The Ontario study from the early 1990s noted earlier [Research and Evaluation Branch, 1992] was too small to allow statistical comparison, and also differed in its methodology. Regardless, WC rates, as indicators of safety must be used cautiously.

In the logistic regression, the variable most strongly related to claim submission was ''severity.'' This is similar to Biddle and Roberts [2001] finding, although they used body site specific disability indices to measure severity. In our data, the relationship was almost solely attributable to cases involving lost time versus no lost time. Yet even among cases with lost time, 30% did not submit a claim. It is sometimes argued that claims are not submitted because it is easier and quicker to file with the workplace's sickness and disability plan, and the Vector Survey [Vector Public Education, Inc., 1989] reported instances of this. In Connecticut, Morse et al. [1998] found that only 6% of those with work-related musculoskeletal disorders (WRMSDs) received support from sickness/disability plans due to the disorder; while in Michigan Biddle et al. [1998] reported that 28% of those not claiming expected to miss work but knew they would receive sick-leave or short-term disability benefits from their employer. However, in our data, there was no evidence that claims submission rates were lower in those whose companies had paid sickness plans. Although this question could not be compared directly to the other studies, our finding is surprising. (Note that our survey asked about injuries, not diseases.)

While one might expect union members to be more willing to submit claims and more knowledgeable about how to do so, there was only a slight tendency for this in our data, and the difference was not statistically significant. Hirsch et al. [1997] asserted they had evidence that unionized workers were ''abusing'' the system, but this was based on crude adjustments for risk and no direct data on injuries. Our results, examining claims for actual injuries, clearly contradict the abuse hypothesis. The proportion of union members in the current data, 55%, was much higher than in the survey

sample as a whole, 27%. This was partly because our analysis omitted the self-employed and also likely reflects the higher rate of unionization in more hazardous industries. In Canada as a whole, unionization in 2000 was 30% of employees.

While overall the relationship with region was statistically significant, the confidence intervals were wide. We wondered if the significant association might be due to occupational patterns in different areas of the country. However, further analyses showed no significant relationship among the eligible injured workers between region and occupation (using a six-category classification); and in any event occupation and submission of a claim were not significantly associated.

Two other variables remained in our final logistic regression model. Permanent workers were less likely than temporary workers to submit a WC claim (OR = 0.14, 95% CI 0.013–1.5).

While this was not significant at the 5% level, the direction of the effect is surprising. It had been anticipated that temporary workers would be less likely to submit a claim as suggested by Mayhew and Quinlan [2000], who found that ''precarious'' workers were less likely to submit a WC claim. Our reliance on self-reports seems unlikely to account for our result. More likely is the fact that the economy was strong when the survey was conducted. The temporary workers may have felt they could easily obtain another job, even if there were reprisals for submission of the claim. Permanent workers, on the other hand, may have felt a stronger attachment to their workplace and not been willing to undergo a similar risk. These comments remain speculative, especially given the small number of temporary workers in our analysis. As expected [Mayhew and Quinlan, 2000], the overall survey found that temporary workers were more likely to be injured than permanent employees. Allowing for hours of work and how much of the previous year the respondent had been working in their job at the time of their survey interview, the rate was more than doubled.

Single jobholders were also less likely to submit claims. Again, this was the opposite of what we had expected. It may be that those with more than one job who were disabled felt an acute need to have at least some income, and were not concerned about possible reprisals since they could return to their other job(s) when they had recovered. As with temporary workers, however, the number of multiple jobholders was small, so further exploration of this is not possible. An indirect way of examining any concern about reprisals was provided by two questions: The first assessed whether job security was good, on a 5-point scale from Strongly disagree to Strongly agree. This was not related to claim submission ($X^2 = 1.64$ on 4 d.f., $P = 0.80$). The second question was ''To what extent do you agree or disagree with the statement. It would be difficult for me to find another job as good as my current one,'' also answered on a 5-point scale from Strongly disagree to Strongly agree. Those agreeing might be less likely to submit a claim. However, there was little evidence of this overall ($X^2 = 0.315$ on 4 d.f., $P = 0.99$). In contrast, Biddle and Roberts [2001] in Michigan reported that roughly one-fifth on those not claiming WC gave fear of retribution as one reason for not doing so.

There are a number of limitations to our study. Firstly, the response rate was low-estimated at 39%. However, the distribution of our total sample by age and gender was similar to that found in the Labour Force Survey which obtains an excellent response rate; and the rate of lost time WC claims was comparable to that reported across Canada.

The final group for analysis contained a relatively small number, 143 individuals. This no doubt limited the power of our analysis to identify relationships between claim submission and other variables. Indeed, in the logistic regression analysis we reported, 18 of the 143 cases were omitted because of missing data. When we re-ran the analysis with only the four variables in our final model, just two cases were omitted, and the parameter estimates changed somewhat—for the regional comparison, the coefficients for Alberta and Saskatchewan/Manitoba (relative to Ontario) were reversed; and the variable multiple jobholder was not significant, even at the 0.1 level. The odds ratio for ''severity'' and temporary work were closer to the null. While these changes did not qualitatively affect our conclusions, they emphasize the caution with which we must interpret the estimates. Finally, all our information comes from self-reports, and we have not verified any of the data provided.

A strength of the study is that it was nationally representative and we established eligibility for WC. The literature cited earlier tended to be limited to certain conditions or certain populations of workers. In our data, we included all workers who met criteria for WC. Our estimate of claims submission is thus an overall population value. (If those who do not speak English or French, and were thus not interviewed, are less likely to submit claims, our estimate of under-reporting is too low.)

The study played no role in adjudication of any claim, thus reporting was unaffected by potential financial gain. This is likely to have improved the accuracy of our data, and to some extent have offset any limitations of self-reporting. Finally, the survey obtained information on a range of potential correlates of claim submission, and these were included in the analysis. Since the survey was conducted by interview, there are very few missing items in each respondent's data.

Much public discourse focuses on alleged over-claiming of various social security benefits. In our study, we cannot assess how much this occurs for WC, although a report from the AFL-CIO [2000] refers to studies from both Wisconsin and California, suggesting that proven fraud is extremely rare (less than 1/10th of 1% of claims). In contrast, our data show there is substantial under-reporting to WC systems. In Canada, failure to submit a WC claim involving medical

treatment means that the cost of such treatment is shifted from employers to the universal public system, which is funded by taxpayers. In Connecticut, Morse et al. [1998] found roughly two-thirds of visits to health care providers and procedures for WRMSD were paid for by medical insurance, not WC, an equivalent shifting of payer. Likewise, Biddle and Roberts [2002] found more than half of those with over 7 days' lost time who did not claim WC had another source of wage replacement.

We did not ask respondents about the impact on their families and themselves of failure to file for WC benefits. This is an important point, for even when WC benefits are claimed, they can leave the injured worker with substantial financial loss [Boden and Galizzi, 1999]. The need for further understanding of these issues has been recognized by NIOSH, whose National Occupational Research Agenda includes the topic of social and economic consequences of occupational illnesses and injuries [NIOSH, 2000]. Our data show that this should include the impact of failure to claim appropriate benefits.

The survey did not include questions on why workers did not file claims when eligible. As Biddle and Roberts [2001] note, there are differences in claiming from workplace to workplace; further research to understand these would be useful. Meanwhile, policy makers should ensure that workers, employers, and physicians are aware of their obligations to report work-related injuries and illnesses. Not only will this ensure that public funds in Canada do not pay for treatments that should be covered by employers; it will also facilitate proper comparisons of injury rates to be made cross-sectionally by companies and sectors as well as over time.

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