

Canadian compensation law and vibration-induced white finger

A revised description¹

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PATERSON C. Canadian compensation law and vibration-induced white finger: A revised description. *Scand J Work Environ Health* 12 (1986) 402–406. Compensation for vibration-induced white finger (VWF) under Canadian law is reviewed. The historical information available in claims data is indicated with specific reference to British Columbia. The bases upon which the disease is recognized for compensation purposes in British Columbia and Ontario are described. Reference is made to the status of VWF in the compensation schemes of other Canadian provinces. The limitations of the current approaches are noted.

Key terms: adjudicatory guidelines, claims statistics, disability, impairment, occupational diseases, pensions.

Up to 200 000 currently working Canadians are exposed to serious risk from hand-arm vibration (2). Compensation for vibration-induced white finger (VWF) has not been the subject of extensive published information or analysis in Canada. Indeed, the subject of workers' compensation in Canada has seldom been researched and analyzed in the legal literature. In this respect, Canada compares unfavorably with Europe and the United States. No understanding of compensation for VWF in Canada can be acquired without an awareness of the basic Canadian occupational disease law (9).

The central philosophy of workers' compensation in Canada is that it is a compulsory, state-administered, no-fault, mutual insurance scheme which replaces the right of the worker to sue his employer in civil court for work-related diseases or injuries. As an alternative to compensation, the worker can elect to sue a negligent "third party" manufacturer (where the manufacturer is not an employer in the jurisdiction). Alternatively, the agency administering workers' compensation in each province can sue as a "subrogated" party. Such actions are rare, however, partly due to immature laws on the liability and status of Canadian products.

Workers' compensation schemes fall under the jurisdiction of the provinces and were first started by Ontario and Nova Scotia (1915), followed by British Columbia and Manitoba (1917), Alberta (1918), New

Brunswick (1919), Saskatchewan (1929), Quebec (1931), Prince Edward Island (1949), Newfoundland (1951), Yukon Territory (1973), and the Northwest Territories (1977). The schemes are financed by an assessment (tax) levied on every employer at the point of production. The assessment rates vary according to the historical hazard rating of the industry group to which each employer belongs. The rate levied against an individual employer can be adjusted if there is a merit or demerit assessment of that employer.

Although compensation statutes and their administration have been oriented towards injury and trauma, occupational diseases are also covered under every provincial scheme. However, occupational disease claims constitute only a very small percentage of all claims. One study (6) estimated that only 2 % of all fatal claims and 0.8 % of all permanent disability awards (excluding hearing loss) were related to occupational disease. Most claims are for medical aid (approximately 60 %) or wage loss (approximately 40 %). Wage loss compensation and pensions are paid when real wage loss occurs (projected wage loss is pensionable in some provinces). There are no awards in any compensation scheme for pain and suffering or for social or recreational losses. There is no ongoing, automatic, administrative search for disease incidence. And no compensation law requires epidemiologic research.

Claims data

A historical analysis of claims made to any provincial workers' compensation board is difficult. Few have fully utilized computer data storage and retrieval methods. Where such methods are used, the historical data in the claims file are not all necessarily available. Statistics are not usually maintained on both claims received and claims paid, rather generally only on claims paid. In addition the information available in

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any computer file is limited by the design of the computer coding; generally only the nature of the disease and the source of injury are provided. The pension percentage, the duration of wage-loss payment, or the nature and amount of medical aid or vocational rehabilitation may not be described.

For example, the British Columbia Workers' Compensation Board has reliable computer recall for as far back as 1972. However, only since June 1980 have all occupational disease claims been computer coded. The reliability of earlier data cannot be confirmed, and claims filed in each jurisdiction must be used. An example of the current computer coding for a chain-saw operator who has contracted VWF would be as follows:

Type of accident: "contact with vibration"

Source of injury: "chain saw"

Part of body: "circulatory"

Nature of injury: "other-industrial disease"

The National Work Injuries Programme is a program sponsored by Statistics Canada to provide a reliable, national, and uniform basis of jurisdictional comparison. Unfortunately, not all provinces have been involved in the last decade of preparatory work.

Occupational disease recognition

The inclusion of a disease in a formal schedule generally carries with it great legal benefit for the worker. In such cases, there is a specific presumption as to disease etiology, unless disproved by positive evidence provided by the compensation board or the worker's employer. To quote the British Columbia Workers Compensation Act, RSBC 1979, C.437, as amended at s. 6(3): "... the disease shall be deemed to have been due to the nature of that employment unless the contrary is proved."

Of the provinces which utilize a formal scheduled listing of occupational diseases, seven do not include VWF. These are: Nova Scotia (see Workers Compensation Act, RSNS 1967, C.343, as amended to date, schedule A); Quebec (see Industrial Accidents and Occupational Diseases Act, SQ 1985, as amended to date, schedule I; it has a listing called "Disease Caused by Vibrations"); New Brunswick (see Workmen's Compensation Act, RSNB 1973, C.W.-13, s. 76, as amended to date; regulation 67-13 as amended to date by NB regulation 76-140; 79-30, paragraph 14); Prince Edward Island (see Workers Compensation Act, RSPEI 1974, C.W.-10, as amended to date, schedule); Newfoundland (see Workers Compensation Act, RSN 1970, C.403, as amended to date, schedule); Alberta (see Workers Compensation Act, SAlta 1973, C.87, as amended to date; general regulations, Alta. regulation 263/73, as amended to date, s. 14); and Ontario (see Workmen's Compensation Act, RSO 1970, C.505, as amended to date; general regulation 834, as amended to date, schedule 3).

The lack of an occupational disease schedule or a schedule inclusion does not mean a claim for VWF cannot be accepted. However, in such cases, the onus is on the worker to establish the medical condition and the work-related etiology. The medical diagnosis and legal adjudicatory criteria are commonly unpublished, and perhaps totally discretionary.

British Columbia

The Worker's Compensation Board of British Columbia has not developed comprehensive, specific written guidelines covering medical diagnosis, medical treatment, claims adjudication, pension entitlement, or vocational rehabilitation. There are unpublished internal memoranda, however, which provide some guidelines for disability pension assessment. For example, a disability is recognized "... in that it has the potential to impair earning capacity." A disability does not constitute "... a predisposition which was not caused by the work environment." A functional (physical) impairment is recognized, as for example "... there is no doubt that there is such an impairment of the circulatory system." The steps for medical diagnosis and criteria for disability entitlement currently being utilized by the British Columbia Board are the guides of the American Medical Association (1) as modified by Laroche (7). Cases are assessed on an individual basis, and use is made of the Guidelines for Adjudication developed for the Ontario Board by Dr D Burton (7) ("Vibration-Induced White Finger Disease: Guidelines for Adjudication," approved by the Ontario Workers' Compensation Board 10 January 1978; see also the 1977 Claims Adjudication Branch Manual).

The British Columbia Board (3) has formally recognized the following condition as an occupational disease: "vascular disturbances of the extremities" (description of disease) "where there is prolonged exposure to excessive vibrations at low temperature" (description of process/industry). It is not presently clear when this condition was first scheduled or what initiative or field research prompted its inclusion. There is a reference to at least one earlier study originating from the initiatives of the British Columbia Board (8). It would, however, be relevant to know what is meant in the schedule by prolonged exposure, excessive vibrations, and low temperature; whether all three criteria need to be established, as an unpublished decision of commissioners of the Board seems to indicate (claim #XY78068461, 24 June 1980), and whether there are minimum requirements.

From 1972 until 1984, there were 28 VWF claims accepted and 23 pensions awarded for VWF in British Columbia. A fixed pension award of 4 % for total disability has prevailed in this province since 1978 for those cases in which there has been no return to previous or equivalent occupations and for which there

is no evidence of vascular damage from physical, radiological, or arteriographic examination. These pensions had a median capital reserve of CAD 19 000 and an average capital reserve of CAD 45 000.

There are several points to be considered in VWF awards. First, for loggers or miners with long exposures, the worker is likely to have other physical disabilities from the work, such as hearing loss, spinal deterioration, and/or a variety of trauma-induced ailments. Job mobility is adversely affected by factors such as education and age. In addition private retirement pensions may not be available. Therefore the worker's job alternatives are limited. Second, the 4 % pension is equivalent to such other scheduled awards as "Loss of One Thumb (either hand) at I.P. [interphalangeal] Joint" and "Loss of One Index or Middle Finger (either hand) at M.P. [metacarpophalangeal] Joint" (4). It is questionable whether the described loss of digits would generally necessitate leaving one's employment, as VWF does with chain-saw operators, fallers, miners, or operators of any other type of vibrating tool. It may be that historical social values regarding physical disfigurement are the source of the apparent incongruity.

Only a specified method for evaluating a real or projected loss of earnings can adequately address the problem. However, not all Canadian provinces have such a method. Statutory wage ceilings also limit the economic justice to be accorded, even when such a method is used.

The number of workers exposed in British Columbia to hand-arm vibration through the use of chain saws has been estimated by the Research Department of the International Woodworkers of America, the largest industrial union in British Columbia, representing most unionized fallers. It estimates that there are approximately 1 625 Union fallers using chain saws, of which 1 030 are in the Coast Master Agreement, 400 are in the Coast Independent Agreements, 70 are in the Southern Interior Master Agreement (Scott D, personal communication). There are, in addition, unknown numbers of loggers who are not unionized in British Columbia. Other users of chain saws include forest industry workers on landing work, bridge construction, and right-of-way clearing. It has been estimated that coastal fallers average from 3.5 to 4.5 h of exposure per day.

A 1979 survey (Survey of Professional Chain Saw Users, unpublished) by the aforementioned union and the Portland State University covered workers in the Pacific northwest states of the United States (Washington, Oregon, Idaho) and the Canadian western provinces (British Columbia, Alberta, Saskatchewan, Manitoba). Of the 156 respondents only 10 % reported no symptoms, such as burning sensation or numbness. Approximately 43 % reported difficulties under cold conditions. Use of gloves, tight grips, warming, and rest periods were reported as defensive techniques. It was reported that very few saws are presently used that

do not have antivibration devices, such as rubber isolators.

These results may be compared with the symptomatic response received by Brubaker et al in an unpublished study on the prevalence of VWF among fallers in coastal British Columbia. The investigation indicated that 51 % of coastal loggers in British Columbia complain of some form of VWF.

Alberta

Alberta has no adjudicatory or diagnostic guidelines, but basically follows those of Ontario. The province has no scheduled condition recognized as an occupational disease (ie, it does not utilize a legal presumption methodology on occupational disease claims). Therefore each case is considered on its own merits. Advisory medical panels may be used at the initial decision-making level. The members are appointed as experts in groups of two or three by the Director of Medical Services. Appeal medical panels also exist for medical disputes. Alberta uses a physical (functional) loss method for pension awards. This procedure may now be modified by a disability evaluation committee to a loss of earnings method (Hall WF, personal communication).

Saskatchewan

Saskatchewan had a formal scheduled listing in its former schedule II (Workers Compensation Act, SS 1973—74, C.127), and had had it since around 1962, as follows: "vascular disturbances in the upper extremities due to continuous vibration from pneumatic or power drills, riveting machines or hammers" (description of disease), "arising out of, and in the course of, employment" (description of process). It no longer maintains an occupational disease schedule [Workers Compensation Act, SS 1979, C.W.-17.1, s. 84 (1), (2); proclaimed effective 1 October 1979, remainder of Act proclaimed effective 1 January 1980]. This province also no longer defines the term occupational (or industrial) disease by statute. Formerly, it was defined as "any of the diseases mentioned in Schedule II, and any other disease that by the regulations is declared to be an industrial disease."

The first claims date from the early 1960s; they came from northern underground miners working under extremely cold and wet conditions. Since that time, work conditions have improved, and the claims received now number only one to two per year.

Pensions paid prior to 1 January 1980 averaged 7.5 to 10 % of the worker's salary. Since 1980 and the new act, a fixed lump sum of approximately CAD 1 000 is paid (Elliot GF, personal communication).

Ontario

Interest in this subject was awakened in Ontario with an "avalanche" of claims from the mining industry

in 1977. Apparently VWF claims have been received since at least 1944 but not permitted until the early 1950s.

VWF is not a scheduled occupational disease in Ontario. The reason is unclear, particularly given that Ontario may well have produced a greater volume and diversity of claims than any other province, with the possible exception of Quebec. This situation may change with a new 1984 enactment, Bill 101, which establishes a new "Industrial Disease Standards Panel" with authority to recommend prescribed occupational diseases.

Ontario's specific internal adjudicatory guidelines, in continuous, unamended use since 10 January 1978, have the following salient requirements: (i) "clear and adequate history of two or more years continuous employment on high frequency, rapid acceleration vibratory tools immediately preceding the onset of vasospastic response"; (ii) "medical confirmation by vascular specialist"; (iii) "permanent disability award may be considered for this condition two years after definitive diagnosis"; and (iv) "benefit of reasonable doubt applies on all issues, including exposure evidence as to type and duration." Unlike British Columbia, for instance, there is no low-temperature requirement.

The majority of claims have apparently arisen from the mining industry, particularly from the use of the horizontal jack-leg drill. Commencing approximately in 1977, the claims received increased dramatically, but the reason for this increase is not clear. A major descriptive computer-file review is currently (May 1985) under way, it includes 260 such coding variables as age, sex, latency period, tools, and occupations. The results will eventually be published.

Table 1 shows the crude claim figures current to 31 December 1984.

Pensions are awarded for physical impairment, not for estimated loss of earnings. The former is supposed to correspond crudely to the latter. These awards generally range from 1.5 to 10 % (1983 figures), although one case was orally reported in 1984 at 100 %. Most pensions are awarded in lump sums due to the relatively small amount involved. In 1983, 156 out of 180 pensions awarded were in a lump sum form, the other 24 being paid in periodic payments. In 1984, 275 out of 315 pensions were awarded as lump sums, the other 50 as periodic payments.

The occupational distribution and the differential between claims received and claims accepted are both interesting. It is presently unclear what key factors influence the rejection of the claims and why comparatively more rejections occur in industries other than mining. Presumably, the computer study now under way will help provide the answer.

It is unclear whether the Ontario Board has ever financed either medical or scientific research or technological change in this area in any industry or occupation affected.

Table 1. Ontario claims for vibration-induced white finger up until 31 December 1984 (from 1920?) (Hilliard N, personal communication).

Claims received	Claims allowed (includes medical aid and wage loss) (N)	Permanent disability pensions awarded (N)	Mean average pension (physical impairment) ^a (%)
?	1 585	1 311	4.0 %

^a Estimated on the basis of pensions awarded in the 1983 calendar year only.

Table 2. Ontario claims for vibration-induced white finger in 1983 by occupation and acceptance. (Hilliard N, personal communication).

Occupation	Allowed		Rejected		Total		Disability examinations (N)
	N	%	N	%	N	%	
Mining	282	64	161	36	443	100	208
Nonmining	9	32	19	68	28	100	5
Total	291	62	180	38	471	100	213

Table 3. Ontario claims for vibration-induced white finger in 1984 by occupation and acceptance (Hilliard N, personal communication).

Occupation	Allowed		Rejected		Total		Disability examinations (N)
	N	%	N	%	N	%	
Mining	322	67	160	33	482	100	323
Nonmining	20	41	29	59	49	100	12
Total	342	64	189	36	531	100	335

Tables 2 and 3 show a considerable increase in the numbers of claims submitted and in the numbers of individuals being seen for permanent disability examination. No reason has been given for this increase. Presumably, either something is making exposed workers such as miners more aware of their right to claim or the relative disease incidence is increasing or there is more exposure through more mining. Perhaps it is a combination of all three.

Disability awards are also considerably on the increase. In 1983 the most frequent disability award was 2.5 %. In 1984 it was 5 %. It is not clear whether the severity of impairments has increased or whether the assessment criteria have changed or have been given a more liberal application by medical examiners or by senior administrators.

Conclusions

The following conclusions can be drawn from this preliminary survey of practices concerning Canadian workers' compensation:

1. Canadian compensation boards do not have a uni-

form legal or medical approach to VWF.

2. Some Canadian boards appear to have little or no specific, formalized legal or medical approach whatsoever.

3. Where there is uniformity, Ontario's approach is the model, which places reliance upon the Laroche modified version (7) of the guides of the American Medical Association (1).

4. In adjudicating awards, Canadian provinces still rely predominantly on the traditional physical impairment method, and this method is not well suited for dealing with VWF.

5. Compensation for VWF in the form of wage loss and pensions varies from province to province.

6. Pension awards have been modest, both in numbers and in the percentage of disability awarded.

7. It is probable that hundreds more undiagnosed and uncompensated cases exist in Canada, primarily from chain-saw use in the forest industry.

8. Canadian workers' compensation law and its administration have been of limited use in the recognition, treatment, and prevention of VWF and also in meeting the income and employment needs of workers who suffer from this condition.

9. Legal and administrative decisions outside of medical diagnosis and treatment are being influenced heavily by internal medical staff of the workers' compensation boards. This phenomenon is primarily the result of inadequate legal attention and administrative direction.

10. Statistical computer-coding methods require increased uniformity, specificity, and historical coverage across Canada to assist with the description and evaluation of VWF and to aid administrative and policy planning.

11. There does not appear to be any organized effort towards epidemiologic investigation or claims solicitation.

Unless the disease incidence is fully recognized and receives proper compensation, workers lose social and economic opportunities to which they are entitled. In addition, unless the actual incidence and real costs of VWF are registered fully within the compensation system, a "total loss cost" approach to prevention cannot be expected to perform well. It is through the impact of employer assessment costs and compensation costs that prevention and technological and medical research will be stimulated.

Future descriptive and analytical tasks

There is still much more work required to document the history and development of adjudication criteria

for VWF claims, through the legal, medical and public policy parameters involved. The raw claims data are still not easily available, nor are they comprehensive for all Canadian jurisdictions.

The following fundamental research and policy tasks remain to be addressed:

1. Are the current Canadian standards for exposure to hand-arm vibration as comprehensive and progressive as possible (5)? Are these standards being complied with on the job and how is state regulatory enforcement being carried out?

2. How has compensation policy for VWF furthered prevention, vocational rehabilitation, and medical treatment?

3. VWF compensation policies should also be assessed in the context of all vibration-related injury and disease compensation, for example, in the context of noise and hearing loss compensation.

4. Should there be legal requirements for technological research and design or medical monitoring? How should such requirements be written? To whom should they apply — manufacturers, users, or both? How can they be enforced internationally?

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