

Occupational Disease Prevention in Canada

A Change of Direction?

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Worker's health and safety in Canada has made remarkable progress in the past decade. A distinctively Canadian approach has emerged, and important legal and social frameworks have been created. Yet, despite extensive activity directed at prevention, occupation-related disease^a remains a risk for some working Canadians.

Occupation-related musculoskeletal aches and pains such as back problems reach epidemic proportions. Infectious diseases, notably AIDS and hepatitis B, loom threateningly in the occupations of many workers. Diseases of the skin and respiratory system caused by sensitization to materials in the workplace continue to disable workers. The true incidence of occupation-related cancer remains unknown.

In deciding how to respond to the trends, decision-makers involved in workers' health and safety in Canada are faced with deciding whether the way forward lies with more of the same activity (on the grounds that the situation would have been much worse without the activity of the last decade) or something different (on the grounds that radical change is required).

IMPORTANT INFLUENCES ON WORKERS' HEALTH AND SAFETY IN CANADA

Workers' health and safety in Canada is influenced by the broader community. The environmental movement demonstrates that the public no longer needs convincing about the importance of action on acid rain, PCBs, and all the other industrial chemicals and physical agents that contaminate the natural world. Public opinion surveys confirm that the public expects action. Issues of contamination and pollution wind up on the agendas of politicians and not just the desks of officials. The need to solve problems by elimination of contaminants encourages the ideas that tough anticontamination standards are not necessarily economically retrogressive and that consistent, pan-Canadian approaches may be required.

AIDS exerts a powerful influence on thinking about community health. Health promotion emphasizes provision of information to equip individuals to take better

^a As more diseases are associated with occupation, more multifactorial etiologies are revealed. The qualifier, "occupation-related," seems broader than "occupational," because the latter tends to limit the category to the classical diseases of occupation, which by no means represent the gamut. Occupational deafness increases as a problem, judging from a recent analysis of workers' compensation claims in Alberta.¹

control over their lives. So far, information is the principal AIDS strategy that governments direct towards the wider public. The strategy aims to give the public greater awareness of the need for control over normally rather private aspects of their lives.

Substance abuse attracts public concern. The extent to which it affects the workplace is unknown. Controversy raised by proposals for mandatory drug testing of workers leads to a broadening consensus that it is not the solution to problems of substance (or alcohol) abuse in Canada, and that it should not be instituted as a general routine.² As a byproduct, further questioning is evoked about mandatory biomedical surveillance, which has become an issue in Canada.^{3,4} Questions focus on the quality of the defense offered by medical surveillance when used as a backstop; whether the defense is offered to employer or worker; and whether the defense is sufficient to justify the use of law to compel workers to subject themselves to it, to oblige employers to provide it, and to require regulators to enforce it. The issue turns on concerns about whom the data go to, what these are used for, and whether the medical focus that mandatory biomedical surveillance gives to occupation-related disease diverts attention from engineering control.

Influences acting on and generated by governments, employers, and labor within the Canadian world of workers' health and safety currently create contradictory and inconsistent pressures. Fears of the costs of occupational disease, for example, constitute one such pressure.⁵ The fear of costs of compensation vies with the fear of costs of prevention. Pressures resulting from disquiet at the nonsolution of problems and the apparent worsening trends are inconsistent because of controversy about the way forward. Labor seeks greater power for workplace health and safety committees. Employers see such proposals as erosion of management's right to manage. Both express impatience with governments' performance as regulators and as operators of the workers' compensation system.

Labor, employers, and governments, however, hail the recent Workplace Hazardous Material Information System, federal-provincial-territorial legislation equivalent to the U.S. Hazard Communication Standard, as an outstanding success in tripartite cooperation in creating forward movement.

STRATEGIES IN REGULATORY ACTIVITY IN CANADIAN OCCUPATIONAL HEALTH AND SAFETY

Regulatory activity aimed at workers' health and safety in Canada is a multi-jurisdictional responsibility in which the federal government counts as 1 among 10 provincial and 2 territorial governments. The activity invokes technical and social strategy.

Technical strategy in Canada, as elsewhere, produces regulations with detailed and performance specifications for engineering control, personal protection, and, in the case of several disease-related hazards, biomedical surveillance. Technical strategy can reasonably be credited with much of the decline in the "bloody" occupational injuries and certain categories of fatalities, such as trenching collapse. Exactly where the credit should go for the overall favorable trend in fatalities is less clear, because the graph of fatal accidents at work closely follows the ups and downs of fatal transportation accidents. In Canada, as elsewhere, the regulatory responsibilities for the two are separate and distinct.

For the period 1969–1985, the two sets of accident data correlate highly (Spearman's rank correlation coefficient, $r_s = .9$, $z = 3.60$). The data still correlate highly ($r_s = .82$, $z = 3.29$) when allowance is made for year-by-year changes in the employed workforce. The high correlation is a mathematical fact, but it could also be a meaningless association. Until this and other uncertainties are resolved, it is difficult to draw firm conclusions from the workplace fatality data about the general effectiveness of the regulatory activity relative to any other.

The increase in occupation-related disease speaks to a need for evolution of technical strategy. Social strategy reflects the distinctively Canadian element. It is expressed in laws as three rights for workers: to know, to refuse, and to participate. The right to know is legislated in the Workplace Hazardous Material Information System. This important development follows the call by labor union activists during the 1970s to workers to "find out what hurts you in your plant."⁶ Like the public at large, the working public is no longer satisfied to leave everything to the experts. Workers want to know for themselves and to equip themselves with trustworthy, intelligible, timely, and relevant information to participate in committees that plan actions to rid workplaces of dangers. And it is not just workers; managers and supervisors often feel that they are inadequately informed on occupational health and safety problems for which they are held responsible.

Right-to-know appears in legislation, actual or proposed, concerned with protection of the environment as well as protection of workers. As a likely and constructive outcome, Canada will develop a well-informed industrial public, wanting cleanup of contamination as the means to prevent and avoid disease linked to environment and occupation. Right-to-know laws help make information a major impulsion in occupational health and safety, one that is facilitated by the electronic information revolution.

The right to refuse means that a worker can expect legal protection if he or she decides not to work with some substance, on some equipment, or in some place because he or she believes that to do so would be dangerous. At first, this protection covered only situations of imminent danger. Subsequently, it began to extend to danger of a continuing nature.

Few data are available from which to judge the impact. Existing impressions suggest that refusal actually occurs only in extreme situations. But the knowledge that it is available to workers seems to stimulate constructive action before situations become extreme. Its true success might not be revealed by the raw data on the number of times it is formally invoked; its real strength may lie in its silent influence.

The right to participate is realized in the joint labor-management health and safety committees that most worksites (other than the smallest) are required to have in nearly all the jurisdictions. These committees are generally regarded as useful developments that need to be well served with information if they are to reach their full potential.⁷ Although employers find controversial some government and labor proposals to give committees more power, the committees' continued importance is not in question.

The right to participate is also realized in the tripartite and bipartite structures that govern regulatory activities and, in some instances, workers' compensation. Examples are New Brunswick, Quebec, and soon, the federal Government. Although tripartism grows increasingly attractive owing to its acknowledged achievements (the Canadian Centre for Occupational Health and Safety provides one example), labor-employer bipartism is also being developed in connection with hazardous substances.

As social strategy develops, the niceties of the two isms emerge. Government

is not always a partner equal to the other two because officials are seldom completely free to commit their governments to courses of action, whereas representatives of labor and employers may come to the table with full negotiating rights.⁸ Impatience with government may be a factor that favors labor-employer bipartism.

INFLUENCE OF THE SOCIAL ON THE TECHNICAL STRATEGIES

The social strategy, whose influence continues to grow, encourages reflection and discussion that foreshadow effects on the technical strategy.

Some proponents advocate what they term the neutral ground, situated well away from the various controversies of employers, labor, and government. They characterize it as objective, excellent, independent, and "good" science.

Criticisms that this ground is scientist-dominated, closed-shop punditry have been responded to with increased openness of the scientific process, notably to labor. But surprise and disappointment ensued with the dissatisfactions that emerged with some of the "open" studies.

The dissatisfactions may signal prerequisites for success when the two isms oversee research into occupation-related disease. Participants may need to share clear understandings of just what the research can and cannot be expected to yield in the way of data and conclusions and with what degree of uncertainty. "Further research is required" may be completely justifiable scientifically, but it is a conclusion that carries a high risk of frustration in tripartite and bipartite projects.

Other proponents advocate the common ground. They define it as what labor, employers, and sometimes governments accept as common ground. What these two or three stakeholders (according to the ism involved) finally identify as the common ground tends to be solution-seeking action on problems. What they always seem to stress in retrospect is the importance of confidence and mutual trust. What seems always to surprise them, if the Workplace Hazardous Materials Information System and the Centre's workshops are any general indication, is how broad the common ground really was when they got right down to it.

Enthusiasts characterize the common ground as dominated by common sense, consensus, and trustworthiness. They point to the way information causes disquiet with the status quo, so that the need for change itself becomes the common ground. Skeptics see the search for a common ground as too unscientific and altogether too "social."

Because they rely to such an extent on information, stakeholders exploring for the common ground tend to become impatient with scientific research, although their own vehicle of discovery is often cumbersome and slow. Some professionals and scientists view information as not quite the "real thing" of occupational health and safety, unlike research. Yet analyzing and interpreting scientific information reveals gaps in knowledge and opens up opportunities for research.

Emphasis on information creates a prerequisite for information parity, in which all stakeholders come to the table equally well briefed with excellent, impartial information. The prerequisite puts a premium on excellent, impartial information providers. With the experience of exploring for the common ground has arrived some understanding of its nature and the factors that the search for it involves.

Common ground and consensus, although closely related terms, should probably not be used as synonyms. Common ground is something that preexists, that

awaits discovery, and that can be extended by exploration. It is not threatened by acknowledgments that it is bordered by territory that is not common. Consensus is concord or agreement of opinion often arrived at after discussion in which participants move position. "Failure to arrive at consensus" carries an unsuccessful implication.

Demanding that participants reach a consensus may be inhibiting, especially when troublesome issues are on the agenda. Requesting them to identify and describe any ground that they have in common may be a more encouraging start to a process that could well lead to consensus if allowed to run its natural course.

The terms stakeholder and participant probably should be separated cautiously. Stakeholders hold a stake, defined as something at risk. Participants have a legitimate interest in participating, but have nothing major to lose in the way that stakeholders have. In an arena as diverse as workers' health and safety, it can be difficult to establish clear-cut rules and procedures to limit involvement to stakeholders, who understandably resist the intrusions of parties whose interest seems not to qualify them for stakeholder status. In informal processes, progress may result most rapidly when everyone is referred to as a participant. "Stakeholder" is probably best confined to formal, highly structured processes that lead directly to decision-making.

Some of the factors for success in tripartite and bipartite searches for common ground include: (1) multiway and reciprocal sensitivities to the constraints acting on participants; and (2) wide recognition that the common ground is finite and limited and that pushing too hard threatens the process and ultimately reduces the chances of arriving at consensus. Despite these seeming constraints, experience with the process suggests that the common ground expands rather than contracts as the process develops.

RESEARCH AND SCIENTIFIC ACTIVITY

An important difference emerges between gatherings of researchers and bipartite or tripartite workshops. The former naturally enough see ideas for further research as an outcome of prime importance, whereas the latter seek solutions to problems.

Calls for action on solutions to workplace problems, which seem likely to increase as bipartite and tripartite processes spread, may move research and scientific development into an increasingly technical and engineering orientation. For example, the common ground at a 1987 workshop on workplace back injury included a clearly worded statement that the problem was to be solved by changes in the workplace.⁹

Movement of the orientation of research highlights a divergence of direction for research and scientific activity aimed at occupation-related disease. In one direction, the epidemiologic approach focuses on disorders of bodily constituents and functions, diseases, and deaths of persons contaminated by noxious factors of the workplace or the general environment. In the other, the environmental approach concentrates on the contaminants and the contaminators rather than the contaminated persons. In theory, the two approaches complement each other, because it seems useful to correlate the consequences and the contamination.

But the limitations of real-world data, which epidemiologists are the first to acknowledge, are such that uncertainty may well be irreducible even with the

most refined epidemiologic technique. Epidemiologists rightly qualify their conclusions and call for further data. But the almost constant need to continue or enlarge studies may just be starting to diminish enthusiasm for correlation-seeking.

Efforts to combat the problem of the irreducible uncertainty diverge. One stream moves to more localized data, that is, data that focus on specifics. With computers, narrative and descriptive information, as distinct from purely numerical data, can be stored, searched for, and analyzed with increasing facility. The other stream flows towards greater data bulks, through record linkage. For examples see the Appendix.

Administrative processes, largely workers' compensation, provide most of the vital statistics related to occupational health and safety in Canada. Localized data are seldom available from these sources, even as a byproduct. Collecting localized data often requires new procedures, which can be expensive to create and operate.

Data linkage among the data collected as byproducts of administrative or regulatory purposes occasionally runs afoul of public concerns about privacy of medical and personal data. Canada possesses increasingly strict laws to maintain privacy of such records against unauthorized intrusion, electronic or otherwise.

OVERVIEW

Early in 1988, it is possible to say that support in Canada for the idea of the common ground could impart sufficient momentum to alter technical strategies underpinning regulatory effort and to reorient research and scientific activity. It is arguable that worker-employer knowledge has emerged as the single most influential factor in Canadian occupational health and safety today.

REFERENCES

1. ALLEYNE, B. C., R. M. DUFRESNE, N. KANJI & M. R. REESAL. Costs of workers' compensation claims for hearing loss. 1989. *J. Occup. Med.* **31**: 134-138.
2. Drug testing in the workplace: Proceedings of the Workshop, Hamilton, Ontario, June 9 and 10, 1987. 1987. Canadian Centre for Occupational Health and Safety, Hamilton, Ontario.
3. Occupational medicine, medical surveillance and human rights: The way forward: Proceedings of the Workshop, Hamilton, Ontario, March 19-21, 1986. 1986. Canadian Centre for Occupational Health and Safety, Hamilton, Ontario.
4. Health surveillance of workers: The report of the Task Force on Health Surveillance of Workers. 1986. *Can. J. Pub. Health* **77**: 91-99.
5. Study calls for public inquiry: WCB costs bankrupting small business, CFIB. 1988. *Can. Occup. Health & Safety News* **11**: 1-2.
6. BOUDREAU, E. 1988. Personal communication.
7. Advisory Council on Occupational Health and Occupational Safety. 1987. Ninth annual report: April 1, 1986 to March 31, 1987. Vol. 56. Queen's Printer for Ontario, Toronto, Ontario.
8. O'CONNELL, M. 1987. Personal communication.
9. Workplace back injuries: Proceedings of the Workshop, Hamilton, Ontario, November 12-13, 1987. 1988. Canadian Centre for Occupational Health and Safety, Hamilton, Ontario.

APPENDIX: EXAMPLES OF DATA COLLECTION FOR EPIDEMIOLOGIC PURPOSES

1. Localized data. These capitalize on the storage capabilities of computers and present at least three variations.

a. Narrative descriptions. These are recorded in considerable detail for defined categories of accident. Examples are the MINING INCIDENTS and FATALITIES data bases currently being built by the Centre in cooperation with the Chief Inspectors of Mines in the various Canadian jurisdictions and the provincial coroners, respectively.

b. Comprehensive data on workplace contaminants and the steps taken to control them. These are numerical and narrative and can be highly detailed. An example is the NOISE LEVELS data base being developed by the Centre. It stores noise levels measured at specific machines, together with data on engineering noise control and the use of hearing protectors.

c. Exposure data. These would be recorded so that individual workers' exposures to hazardous chemical and other agents could be logged throughout their working lifetimes. The data bases would be used to evaluate occupational histories with far greater reliability than is presently possible. The data bases would be logical developments of (a) and (b) and obvious candidates for record linkage, but they would create legal issues of individual privacy. At the time of this writing, no operational example could be identified in the public domain in Canada.

2. Record linkage. Canada possesses a unique resource in the form of a machine-readable mortality data base with records dating back as far as 1950, plus a system for linking them to other files of personal or medical information. Although several studies have successfully focused on occupation-related disease, linkage with occupation is acknowledged to need further development. For further information see: D. B. Petrie. 1986. "Computerized record linkage, long term follow-up and Statistics Canada. In proceedings of the Workshop on Computerized Record Linkage in Health Research. University Press, Toronto.