Evaluating Work Relatedness of Diseases*

Thomas C. Brown

Johns-Manville's chief executive told a Senate hearing last August: "...we have observed quite closely the inability of the current workers' compensation system to deal with the broadest possible range of occupational disease problems and particularly asbestos-related disease."1

Thus, Johns-Manville joined a growing rank of workers' compensation critics.2-5 Professor Peter Barth sifted evidence on compensation for occupational diseases and concluded, "There can be little doubt about one thing: The extent of the problem as perceived by every commentator from the medical-scientific community vastly exceeds the number of claims made by employees or their survivors through state workers' compensation laws."4

Arend Bouhuys estimated in 1979 that 30,000 former cotton textile workers suffer total disability from byssinosis.5 The US Department of Labor has estimated that 85,000 active cotton workers suffer some degree of disability from cotton dust exposure.6 Through April 1980, states reported paying byssinosis compensation to fewer than 450 claimants.

In a 1979 followup study of 383 active and retired South Carolina cotton textile workers, Dr. Bouhuys determined that 33 were totally disabled and 54 were partially disabled by cotton dust. Of these 87, one had received workers' compensation.7

Still, not everyone agrees that most chronic occupational diseases elude the workers' compensation system. Insurance trade associations and many employers argue that workers' compensation should be paid only for conditions unmistakably caused by job exposures rather than for conditions more likely than not to have been caused by the job.8-9 This view is largely reflected in the 50 state laws that govern compensability for most US workers.10 Judicial interpretations have eased restrictive provisions in state laws, but an arduous burden of proof rests on individual claimants whenever chronic disease claims are challenged.

The adversarial system for workers' compensation adjudication is unique to the United States, and it works to the disadvantage of persons with chronic diseases that are caused—or substantially caused—by on-the-job exposures. Most are difficult for clinicians to separate from diseases caused by other factors such as smoking or environmental pollution. A 1975 survey of closed workers' compensation claims11 and an analysis of those data by Barth and Hunt12 show that chronic disease claims are contested much more often than injury claims, with resultant delays and compromise settlements for a fraction of the benefits provided by law. These outcomes are inconsistent with workers' compensation's basic purpose: to deliver fair but modest benefits to injured workers with a minimum of disruption and delay. Perhaps medical knowledge can be organized into criteria and standards that add fairness to the system.

**Criteria for Evaluation of Chronic Occupational Diseases**

Occupational epidemiology is a difficult and expensive science. Study populations are hard to keep track of, exposure information is scarce, and health effects are hard to measure—especially chronic disabling health effects. It takes years to accumulate reliable information. Yet, the task of epidemiologists may be easier than that of examining physicians in compensation cases. Epidemiologists enjoy the luxury of statistical probabilities in their studies of groups, while examining physicians are asked to answer difficult questions about individual cases.

1. What illness does the claimant have?
2. What caused the illness? If there was more than one cause, how much did each cause contribute?
3. How much is the claimant's normal functioning impaired by the illness? To what extent is he or she

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disabled from working?

Diagnosis of a condition can be difficult, and it is my understanding that the cause question is even more difficult, if not impossible, to answer from clinical observations and tests. Chronic obstructive lung disease caused by cotton dust seems to be clinically indistinguishable from that caused by smoking or other hazards, though epidemiology has made a persuasive case for its existence. Lacking objective tests, examiners have turned for evidence to exposure records that are scarce and histories of symptom development that have questionable reliability in the adversarial setting, where claims are resolved.

Beyond the question of work relatedness, examining physicians may be asked to rate the amount of bodily impairment and whether the claimant is totally or partially disabled from working.

All of these questions require professional judgment, and since judgment is not a standard commodity—even among physicians—the results foster a lot of costly litigation.13

Logic suggests that epidemiologic findings should be turned to the aid of medical examiners in the form of presumptive standards that prescribe objective tests for deciding whether a disease is work related and the degree to which it impairs the worker. Such standards translate probabilities revealed by epidemiology into decision-making criteria. Since the criteria must be based on probabilities rather than certainties, there will be false-positives and false-negatives. But for a limited set of diseases, margins of error can be known, and standards should yield predictable results in a reasonably efficient manner.

The Federal Black Lung Compensation Program, a few states and several western European nations have developed occupational disease compensation standards. They have not been very satisfactory in US practice, but they seem to have had better results in Europe. Accordingly, to test the feasibility of expanding and improving this approach, the US Department of Labor has contracted with health professionals to develop experimental presumptive standards for compensation of three sets of occupational respiratory diseases: byssinosis, nonmalignant asbestos-related lung diseases, and asbestos-related cancers. Proposed standards have been completed for byssinosis14 and nonmalignant asbestos-related lung diseases.15

An ideal standard would include criteria for deciding whether a claimant’s disease is work-related and the amount of bodily impairment resulting from the disease. The criteria should enable decisions to be made based first on objective medical tests that are standardized, available throughout the nation, and not, in themselves dangerous, and, second, on hazard exposure information that is realistically available.

The epidemiologic foundations of the criteria should cover active and former workers, cover all or most of the occupations and industries at risk, be extensive enough to provide reliable probability estimates, and measure interactions between occupational causal agents and others that are not entirely work-related.

Any standard written today will fall short of the ideal to some degree. A question that should be investigated is how many job-caused diseases have been sufficiently researched to support standards that would approach the ideal closely enough to be useful. It appears that the list is not yet very long.

The concept of standardized presumptive criteria implies that some classification errors will be made, so recourse should be afforded. Probably, decisions based on the criteria should be rebuttable, with the burden of proof resting on the party that appeals the decision. Compensation payments should be made in cases that meet the criteria, pending resolution of any appeals.

The locus of the burden of proof has financial importance, so we can expect that setting criteria will be contentious—and will be subjected to litigation, much like OSHA health standards.

Though presumptive compensation standards offer no panacea, they should be developed to their maximum potential to aid examining physicians and to relieve the compensation system of unnecessary arguments.

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Diagnosing Byssinosis: The Medical Controversy

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Although there have been significant improvements over the past decade in programs designed to protect and compensate cotton textile workers, the lack of an agreement within the medical profession in the United States about the definition of byssinosis, its recognition and severity, still stands as the biggest roadblock for minimizing and eliminating the impact of this disabling disease.

In spite of the widespread recognition of byssinosis in the medical literature, its diagnosis for the individual in a clinical setting is still subject to tremendous controversy. Defining the disease and distinguishing it from other non-occupational chronic lung diseases continue to be debated within the medical community, particularly with respect to workers’ compensation proceedings where separating work from non-work-related causes may be at issue. In its final disabling stage, chronic byssinosis presents clinical symptoms which resemble most other obstructive pulmonary diseases—chronic bronchitis and emphysema—and have similar pathologic results—production of sputum, shortness of breath and small airway obstruction.

In the past, description of pulmonary symptoms on the first workday has generally been used in diagnosing the early, acute stages of the disease among workers who are still exposed to cotton dust. The work of both Bouhuys and Schilling in this area have given us important diagnostic tools for early recognition of byssinosis in still-exposed populations. However, these indicators have proved to be inadequate in distinguishing the disease among workers who have already reached the chronic disabling stage and whose initial exposure to cotton dust, and initial symptom reaction, may have occurred over 20 years or more ago.

Although there are always problems with observer bias, the physician’s skill at diagnosis, and the workers’ reliability in relating symptoms, accuracy of diagnosis is further compounded by the fact that there are few individuals who follow the “classic” medical textbook definition of byssinosis. Some workers may develop chest symptoms rather quickly after exposure to cotton dust on all days of the week and never experience the subjective symptoms of “Monday fever,” in spite of substantial exposure. A more common problem, particularly among workers who are still exposed, is a total denial of symptoms, because of possible job repercussions.

**Medical Panels and Occupational Disease Compensation**

Occupational disease claims have presented the state workers’ compensation system with the toughest challenge in its 70-year history. Originally, the system was set up to deal mainly with work-related injuries, where the cause of physical impairment was clearcut and the occurrence of disability immediate. However, most occupational respiratory diseases and cancers are characterized by long latency periods before they manifest themselves or develop into a chronic disability, increasing the difficulty of linking the disease process with a prior hazardous work exposure. Many work-related diseases, such as byssinosis, have symptoms and pathology which are indistinguishable in their chronic stages from other non-work related conditions.

Disease claims tend to be more costly both to claimants, in terms of lost future wage earning capacity, and to employers in terms of liability for lifetime future disability payments. Hence, there is an economic incentive for employers to resist and contest claims automatically involving permanent and total disability, particularly when the claims are for diseases which are difficult to document and when the burden of proof is all on the claimants to prove the work-relatedness of a particular condition.

In the past, expert medical panels have been utilized by workers’ compensation administrators as mechanisms for resolving disputed medical questions concerning work-relatedness of a disease. In 1977, the Federal Interdepartmental Task Force on Workers’ Compensation recommended that all states adopt expert medical panels for use in deciding disease cases, where expert opinion can be used to delineate work and non-work related factors in disease development. In North Carolina, an expert panel for byssinosis was set up during the early 1970’s as a mechanism for resolving the ongoing disputes about work-relatedness.

In spite of the good intentions of its founders, the Textile Occupational Disease Panel of the North Carolina Industrial Commission has become a new battleground for exacerbating the medical disputes about byssinosis, rather than an effective mechanism for fairly resolving them. Within the context of the workers’ compensation process and its need for fairness and equity, the unreliability of diagnostic procedures for chronic byssinosis has become the major roadblock for workers seeking benefits. This is not because of any lack of symptoms or substantial pulmonary impairment on the part of claimants, but a lack of consensus and reliability among the expert physicians who are charged

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