MEDICAL SURVEILLANCE OF ASBESTOS WORKERS

W. Clark Cooper, M.D.
Consultant in Occupational Health
2150 Shattuck Avenue (Suite 401)
Berkeley, California 94704

I appreciate this opportunity to comment on some of the problems associated with the medical surveillance of asbestos workers with special reference to shipyard workers, based on the experience of insulating workers in the Western United States. These latter have participated for the last 10 years in an asbestos health plan jointly financed and supervised by the asbestos workers union and insulating contractors. At the hearing in San Francisco, on October 24, 1978, I discussed at the request of the California Medical Association, "Health Care Delivery and the Problem of Asbestos-Related Disease," and will try not to cover the same ground today.

I am a physician, certified in the specialties of internal medicine and occupational medicine. I spent 22 years, from 1941 through 1963, in the United States Public Health Service. The last eleven of those years were in the Division of Occupational Health, the precursor of the present National Institute for Occupational Health and Safety (NIOSH). After retiring in 1963, as chief of that division, I spent 9 years on the faculty of the University of California in Berkeley, teaching and doing research in occupational health. In 1972, I left the University to become a full-time consultant. For the past ten years one of my responsibilities has been that of medical advisor to the Western States Asbestos Health Plan.

My interest in the prevention and management of asbestos-related diseases began when I was in the Public Health Service. These were the years, from 1952 to 1963, when the association between commercial asbestos and various forms of cancer became convincingly demonstrated, first for

lung cancer, then for mesothelioma, and then for several other tumors. I won't expand on this historical review which should include recreating the consensus of the scientific and medical community at various dates in the past.

In 1964, a year after I came to California, I received a grant from the Public Health Service to study the asbestos exposures and the health status of members of Local 16 of the International Association of Heat and Frost Insulators and Asbestos Workers. This study demonstrated that a large proportion of their active and retired members had asbestosis, and that deaths from lung cancer were seven times expected for men who had been in the trade 20 years or more. We determined, and published, information on work exposures. On a time-weighted average, exposures often did not exceed the then accepted standards for asbestos, which were based on counting all dust particles, rather than fibers. We also included counts of fibers, using methods that were just being developed, and found that there were important peak exposures during certain operations, especially mixing of muds, tear-out, and sawing with power tools. These findings, quickly confirmed by others, helped support the use of fiber counts for standards, the lowering of permissible levels, and the development of improved work practices. I emphasize these points, because, as my testimony proceeds, you will understand why I feel that primary prevention, by eliminating or reducing exposures, is far more important than medical surveillance in meeting the problems of asbestos disease.

In 1966, the asbestos workers and contractors in 13 western states set up a supplemental health and welfare fund for occupational health, financed by a contribution of 2 cents an hour by labor and management. This generated a fund of $30,000 to $50,000 annually as all local unions joined. Unions representing Naval shipyards, because of their different

status, were not participants. It was out of this that the Western States Asbestos Health Plan developed. Dr. Irving Tabershaw and I, as advisors to the contractors and unions, agreed to establish and coordinate an occupational health program.

The program had three major areas: (1) medical surveillance; (2) industrial hygiene; and (3) education. Medical surveillance was directed toward introducing preventive practices into existing health and welfare plans in each local, including the provision of physical examinations in each area by a local clinic approved by us, using uniform records and diagnostic criteria. These clinics furnished chest x-ray films and abstracts of their findings to a central office. Participating physicians, including radiologists, were provided with current information on asbestos-related disease. Points of emphasis included criteria for diagnosis and for continued work in the trade and a campaign against cigarette smoking. The foregoing was not intended as a substitute for medical care by private physicians of the workers' own choosing, who were informed of the findings and encouraged to refer questions to the plan. The operation has continued essentially along the same lines. The content is not limited to concern for asbestos alone. For example, hypertension is more effectively treated than asbestosis and should be detected if present. Chest films and pulmonary function measurements are essential elements. In recent years, sputum cytologic examination is included for those in the trade over 10 years.

An important feature is that medical information is not released to anyone without the worker's consent (the exception of course being by subpoena). The requirement of OSHA regulations in 1972, prescribing that medical information be supplied to employers, seriously curtailed examinations for a while, until it was made clear that this would not change our pro-

cedures. We assume that it could be argued that we act as an agent for the contractors since they are contributing to the funds supporting the program. There have been no legal tests of this, but if a requirement to supply medical data to employers were enforced, the program would have to be discontinued.

At present each man, after examination, is given a wallet card indicating the date of his examination and the place where records are filed. This certifies to his having been examined if he changes employers. He is given recommendations as to continued employment and fitness to wear a respirator, on a form which has no medical data. He is given a brief summary of findings for his personal files, and his physician (if he has designated one) is sent a complete report.

Participation in the plan. Examining clinics during the 10 year period have been arranged in San Francisco, Los Angeles, San Diego, Seattle, Portland, Spokane, Billings, Salt Lake City, Las Vegas, and Anchorage. Some of these have operated continuously, others intermittently. Despite the fact that examinations have been available and fully paid for by the plan, participation has not been high. With 1,800 or more men usually eligible each year, it has been unusual for more than 200 to take the examination. In some local areas, however, 30 to 40% may take part. Participation this year has been the highest since the program began.

At the present time, we have records on approximately 1,300 current and former asbestos workers, with x-ray films on some dating back to 1957.

I expect to publish a report summarizing all of the findings for presentation in February. This will confirm that about one-fourth of all examined have had definite evidence of asbestosis, the proportion being determined by how many have had 20 or more years in the trade, where usually over half will show such evidence. Only one case of early

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lung cancer has been picked up. Sputum cytology has so far detected no malignancies in several hundred examinations.

This leads to the important question of the impact of the program upon the development of impairment, disability, or cancer. In candor, I do not feel that it has influenced these very much. It has provided opportunities to encourage prompt treatment of infections and cessation of smoking where abnormalities have been found, and to reinforce the development of good work habits. Insulators so often work alone in construction work that they can strongly influence their own exposures. But since the more concerned and careful workers probably are the ones who take the voluntary examinations, one does not reach a large proportion of the workers who need education.

The mortality experience of Local 16 in the Bay Area has been disastrous in the past 10 years. Of the 99 deaths that have occurred in the years 1967 through 1978, 53 have been from cancer, where approximately 18 would have been expected. Twenty-five of these were lung cancer, eleven were malignant mesothelioma, six were gastrointestinal tumors, and eleven were from other sites. One man with lung cancer, detected by x-ray early in the program, has survived six years since operation. Ten of the 25 men who died of lung cancer had participated in the program, with their last examination having occurred 6 months to 10 years prior to death. Nine of the eleven men who died from mesothelioma have been examined, 2 to 7½ years prior to death. A rigorous program of annual examinations conceivably might have improved this record, but on the basis of what we know about the outlook in lung cancer and mesothelioma, this is doubtful. That is why primary prevention by reducing or eliminating exposure is so much more important than examination.

It is my opinion that the most beneficial aspects of the program, difficult to describe quantitatively, are the education for the men provided by talking to a health team and the mental relief from a report showing

normal chest x-ray, good pulmonary function, and normal sputum cytology. This reduces non-productive anxiety even though it can provide no assurance that problems will not arise later.

On the negative side are problems that arise when there are abnormal findings by x-ray, but with insufficient impairment of function to cause shortness of breath or other symptoms. If a diagnosis of asbestosis is made, an individual can be made unemployable without impairment sufficient for workers' compensation. In most states, he must file for compensation to protect his rights even though he may not really wish to. And with present levels of control it is almost certainly not necessary for him to quit work for medical reasons; it is not likely that this will significantly affect whether or not he ultimately gets a lung cancer or mesothelioma. On the other hand, a failure of the doctor to tell him of the findings, even in the best interest of the man, can be interpreted as malpractice. For this reason we always tell an individual of his findings, but try to put them in perspective so that he can evaluate his choices. Since serious economic and psychologic harm can be done to a person by telling him he has asbestosis when he does not, it is very important that films not be over-interpreted and that doubtful or equivocal findings not be reported as definite or positive.

Another drawback of the program in which I have been involved is that it is limited to those actively in the trade. Retired members cannot participate without paying for it themselves. Their health insurance programs will not pay for such examination. Also, family members of asbestos workers are not involved.

If I thought mass screening of asbestos workers would be a highly beneficial operation, I would make recommendations for such programs. But in fact, I doubt their benefits other than the reassurance provided

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for those in whom no abnormality is found. Exposures drop off rapidly as one moves from the site where asbestos dust is generated either in construction work or in shipyards, so that the predictions of cancer mortality associated with asbestos recently publicized by the Secretary of Health, Education, and Welfare are probably exaggerated by a factor of 10 to 20, having been based on the experience of groups at highest risk.

The medical surveillance program proposed by the Navy is in conformity with the requirements of OSHA and seems to me to be well-thought out and appropriate. Insofar as it deals with workers who started work after more rigid controls of dust and respiratory protection were instituted, it will probably be of more benefit for re-educating the worker and reassuring him than in uncovering asbestos-related disease. For the latter purpose, an annual examination is not really necessary during the first 10 years or so of employment.

In summary, periodic physical examinations of active and retired asbestos workers provide some benefits in terms of education, reduction of non-productive anxiety and general health maintenance, but they probably have little impact on mortality in those heavily exposed in the past. When current standards of dust control are maintained, examinations will probably detect very little asbestos-related disease in new employees but will reinforce industrial hygiene programs by education. I seriously question the benefit of mass screening for those who have had marginal exposures in the past.

Some legislative actions which might be helpful to those whose exposures have already occurred include:

(1) Increased support for the education and training of professional and technical personnel to provide medical services in pulmonary disease. This would include expansion of facilities for sputum

cytologic examinations and for the localization and treatment of lung malignancies. These are needed not for asbestos alone, but for the much larger problem of cigarette-related cancers.

(2) Encouragement of the inclusion of occupational health services in medical care plans, with wider acceptance of health examinations in the absence of specific illnesses.

(3) Acceptance by the federal government of responsibility for the compensation of former asbestos workers and their families. Although the Fenwick Bill introduced in the last Congress may not be a feasible approach, some legislation along these lines is badly needed. I can see no other equitable way of meeting the problems of those exposed at work or in their homes 20 to 40 years ago. No state worker compensation laws at present are appropriate to cope with asbestos-related disease, nor in fact with malignancies from other occupational exposures.

Again, I wish to thank you for providing me with this opportunity to speak and will do my best to answer any questions you may have.

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