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16. Abstract (Limit: 200 words) This statement concerned the contributions made by NIOSH in the area of occupational safety and health. The problem itself was large as there were more than 80 million workers in the United States employed in over 5 million establishments. Most of these businesses employed 25 or fewer persons. During the National Occupational Hazard Survey over 70 percent of the exposures to which workers were subjected were to trade name products for which the company using the product does not know the chemical composition. NIOSH has estimated that roughly 100,000 Americans may die each year from occupational diseases. Occupational exposures may also play an important part in 80 to 90 percent of the cancers considered to be caused by environmental factors. A guide has been recently developed which was designed to assist State agencies, physicians and others concerned with occupational disease compensation. There was a great need currently for more trained safety and health professionals. During this reporting year NIOSH began funding Educational Resource Centers. Training grants were available for schools of occupational medicine, nursing, public health and engineering. The development of a uniform system for reporting occupational medical data would facilitate the collection and analysis of workplace health and safety problems. The importance of the Criteria Document program was stressed and the establishment of a uniform policy for identifying and regulating cancer causing chemicals was supported. Additional research needs and means of informing workers of various hazards to which they were exposed were noted.

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Statement of

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Department of Health, Education, and Welfare

Before the
Subcommittee on Labor
Senate Committee on Human Resources

June 29, 1977

Mr. Chairman and Members of the Subcommittee:

I am Edward J. Baier, Deputy Director of the National Institute for Occupational Safety and Health (NIOSH), administered by the Center for Disease Control within the Department of Health, Education, and Welfare. Accompanying me today are Mr. Vernon E. Rose, Director of the Division of Criteria Documentation and Standards Development, and Mr. Kenneth Kolsky, of the Office of Program Planning and Evaluation. We are pleased to appear before you today to review the contributions NIOSH has made to provide a safe and healthful work environment for the men and women in the nation's workforce. We will also respond to some of the recommendations made by the General Accounting Office in a recent report charging that administrative weaknesses have caused delays in developing standards to protect workers from cancer-causing and other dangerous substances. In their report, GAO evaluated the NIOSH system for setting priorities, developing recommended standards, identifying carcinogens, and directing our research program.

THE MAGNITUDE OF THE PROBLEM

There are at present more than 80 million workers in the United States employed in over five million establishments. More than 87 percent of these businesses employ 25 or fewer employees. Many of these workers are, often unknowingly, exposed to a large number of hazardous physical and chemical agents. The NIOSH 1976 Registry of Toxic Effects of Chemical Substances lists almost 22,000 different chemical substances, the majority of which were known by two or more different names. As we testified before this Committee last month, over 70 percent of the exposures identified during our National Occupational Hazard Survey were recorded as trade name products for which the chemical composition was not known to the company or the workers using the materials. Based on this survey and other available

information, we estimate that as many as 880,000 workers, or one percent of the current labor force, currently face full or part-time exposure to OSHA-regulated carcinogens. One in every four American workers (approximately 21 million) may be currently exposed on either a full-time or part-time basis to an OSHA-regulated hazardous substance. Furthermore, the approximately 400 chemicals currently regulated by OSHA form only a small proportion of the potentially dangerous industrial chemicals to which workers are being exposed. The Council on Environmental Quality has indicated that 700 new chemicals are introduced in commerce every year.

The magnitude of occupational illness affecting these workers is also difficult to determine. We have roughly estimated that as many as 100,000 Americans may die each year from occupational diseases. That figure was derived by examining mortality rates for persons employed in a wide variety of occupations and comparing these rates with mortality rates of the general population, taking into consideration such factors as age and socio-economic level. Occupational groups whose mortality rates were greater than those in the general population were considered to have an excess death rate attributed to their working environment after adjusting for socio-economic factors.

Occupational exposures also play an important role in the 80 or 90 percent of cancer that is considered to be caused by environmental factors. Geographic analysis of United States cancer mortality from 1950 to 1960 reveals excess rates for cancer of the bladder, lung, liver, and certain other organs among men in 139 counties where the chemical industry is concentrated. An increasing number of chemicals are shown to be carcinogenic in experimental animals or in humans. Since production of chemicals in this country has doubled every five years since World War II,

the incidence of cancers with long latency periods may rise significantly in the future.

A major problem in securing more precise figures on the extent of occupational illness is that such diseases are too often improperly diagnosed and vastly underreported. NIOSH field studies and health hazard evaluations indicate that the problem of occupational disease is far greater than is generally recognized by employers, employees, and the general public. A NIOSH survey on the prevalence of medical conditions in selected small industries in Washington and Oregon found that the prevalence rate of occupational disease was 28.4 per 100 workers. Hearing loss was the most frequent condition (28%), followed by skin conditions (18%), lower respiratory conditions (14%), low grade toxic effects (14%), upper respiratory conditions (11%), and eye conditions (9%). Anemia, diseases of the musculoskeletal and connective tissues and other conditions accounted for the remaining 6 percent.

Since the purpose of this study was to determine how much previously unreported data about occupational disease could be obtained by the study method used, it is difficult to extrapolate national estimates from these figures. Plants were chosen where investigators were likely to find evidence of occupational illness and the study was not designed to identify chronic diseases, such as cancer, where causation could not have been easily established without long-term studies.

The significance of this study is that 90 percent of the occupationally related medical conditions observed had not been reported on workers' compensation claims or OSHA reporting forms. Since many of the conditions recorded are also found in the general population they were probably not recognized as job-related by the employer, the employee, or

his regular physician. Although occupational exposures are a factor in virtually every field of clinical medicine, physicians are rarely trained to take occupational histories and seldom take occupational factors into consideration in their diagnoses. Occupational diseases are often slow to develop and symptoms are frequently attributed to diseases found in the general population or with changes resulting from the aging process or with effects of smoking, alcohol, or drugs. The cause and effect relationship between workplace exposures and certain diseases may be apparent only to the highly trained occupational health specialist.

We have recently developed a Guide to the Work-Relatedness of Disease which is designed to aid State agencies, physicians, and others concerned with occupational disease compensation. The guide presents one method for assembling and evaluating evidence that may be relevant in determining whether a disease is work-related. It also contains a list of occupations with potential exposure to selected agents.

In discussing the magnitude of the problem we should not overlook the need for an adequate number of qualified safety and health professionals. It is conservatively estimated that an additional 1,000 certified occupational physicians and approximately 20,000 physicians with short-term occupational health training are needed to insure that workers receive adequate medical care. We estimate that an additional 4,000 certified industrial hygienists, 4,700 safety professionals, and over 25,000 occupational nurses are also needed.

To begin to meet this need, this year NIOSH will begin funding Educational Resource Centers. Under the Centers program, training grants will be available for schools of occupational medicine, nursing, public health, and engineering to work cooperatively to provide occupational

health and safety training. This training will include curricula and short courses for physicians and nurses practicing part-time in the field of occupational health as well as residencies in occupational medicine and degree programs in nursing, industrial hygiene, safety engineering, and related disciplines. The Centers will serve as a consultative resource for labor, industry, State and local agencies, and other educational institutions.

PRIORITIES

In passing the Occupational Safety and Health Act of 1970, Congress recognized that there were serious gaps in the recognition, evaluation, and control of occupational hazards. Although major advances have been made in closing those gaps in the last seven years, the problems are still with us. In 1976, and again last month, GAO has charged that data on the extent, severity, and causes or potential causes of occupational health problems were not adequate to establish priorities and set standards for thousands of toxic substances. We would agree that lack of an adequate surveillance system for the identification of hazardous exposures and the resulting adverse effects is one of our most serious problems. The National Occupational Hazard Survey was an initial endeavor to identify and categorize the use of hazardous materials in the workplace. Although that information is proving extremely useful, we recognize that it is rapidly becoming dated and more detailed follow-up surveys are needed. Toward that end, NIOSH is presently developing plans to make more effective use of records obtained from OSHA and from employers for surveillance purposes.

NIOSH has learned that workers and employers are often not aware of what they are exposed to largely, as a result of trade name products which

do not identify their composition. In many instances the composition was considered a trade secret.

Development of a uniform system for reporting occupational medical data would also facilitate the collection and analysis of workplace health and safety problems. To accurately document an increase in cancer morbidity and mortality, for instance, we must first have an accurate count of the number of people employed in each occupation. We must be able to link a general occupational category with a specific job category. That is, we need to know whether a janitor worked in a business office or a chemical plant. Then we must have a means of linking new cancer cases and deaths to various occupational groups. The ideal method for linking new cancer cases with occupational groups would be to require that cancer be a reportable disease in every State with a standardized reporting format which would include occupation and place of employment. Such a system does not now exist. Failure to code occupations on death certificates and lack of occupational information on existing tumor registers make our job more difficult. Currently we must use whatever records are available, including existing tumor registers, hospital records, and records available in States where cancer is a reportable disease. Once the cancer case is linked to an occupational group and place of employment, we can use various industrial directories to link the occupation with a standardized industrial category. Hopefully, we would then have information that would enable us to identify excess cancer rates in a given occupation within a given industry.

Unfortunately, at a time when the need for better medical and environmental surveillance data is becoming more and more apparent, the trend seems to be toward restricting Federal access to those data. Employers are becoming increasingly reluctant to permit NIOSH access to

workplaces and plant records, and we are being forced to take legal action to use our right of entry. Since the passage of the Tax Reform Act of 1976, NIOSH has not been permitted to use Internal Revenue Service taxpayer address information in locating and determining vital status of workers as we had in the past. Senator Gaylord Nelson and Congressman William Steiger have introduced bills which, if passed, would again permit us access to IRS data for our studies. Another such example is a proposed amendment to H.R.3, the Medicare, Medicaid Anti Fraud and Abuse Amendments, which would prohibit Federal employees from access to personally identifiable medical records without the specific consent of the individual involved. If the prohibition on our access to IRS data remains in effect and if the prohibition on access to individually identifiable medical records is enacted, the ability of NIOSH to obtain adequate data for priorities and standards recommendations would be severely hampered.

We would agree with GAO that we have not had complete information upon which to base priorities and develop criteria documents. It has been our policy to act on the best scientific data available, pointing out research gaps where they exist and updating our recommendations when better information becomes available.

Originally, our priority system consisted of estimating the number of workers potentially exposed to a hazard and evaluating the severity of its effect. Through this method, criteria for recommended standards were developed for many of the most serious agents, including asbestos, benzene, beryllium, lead, mercury, silica, and noise. The NIOSH priority system has since been revised to also consider new information relating to toxicity or carcinogenicity, toxicity reports on substances which have no OSHA consensus standard, and recommendations from government agencies,

professional societies, trade associations, and unions. The priority system has been flexible enough to allow us to develop recommended standards for substances that we had not previously recognized as high priority hazards, such as Kepone, vinyl chloride, 2-nitropropane, and phenyl beta napthylamine.

Because new information is constantly being developed, the substances on our priority list are periodically re-evaluated. This new information on hazards is obtained through research reports, the NIOSH National Occupational Hazard Survey and the Registry of Toxic Effects of Chemical Substances and associated subfiles. We also receive information from the World Health Organization, and from comments on our proposed priorities published in the Federal Register.

GAO recommended that NIOSH and OSHA establish a single program for considering priorities in developing health standards. We will continue to seek guidance from OSHA in developing our research priorities, as we have in the past. However, priorities for a regulatory agency may tend to be affected by problems that they encounter in standards setting and compliance activities and for which they need short-term resolution. As a research agency, NIOSH must schedule most projects one to two years in advance and take into consideration research gaps that may not yet be apparent to the regulatory agency. Thus, while there will be a commonality of priorities between NIOSH and OSHA, they will not necessarily be identical because of the different responsibilities of the two agencies.

CRITERIA FOR RECOMMENDED STANDARDS

NIOSH has transmitted more than 60 criteria documents recommending new health standards to the Department of Labor. These criteria documents include recommendations for an environmental limit for workplace exposure,

as well as recommendations on the use of labels and other forms of warning, type and frequency of medical examinations to be provided by the employer, sampling and analytical methods, procedures for technological control of hazards, and suitable personal protective equipment.

In addition, under a joint Standards Completion Program with OSHA we have developed draft technical standards for most of the consensus health standards. This program was not designed to question existing environmental limits, but to supplement them with procedures for informing employees of hazards, monitoring techniques, engineering and control mechanisms, and medical surveillance programs. Once these recommendations have been promulgated into standards, and these standards are enforced, workers should be protected from many of the most serious occupational exposures.

NIOSH has made dramatic progress in reducing the average time it takes to produce a criteria document to the present 13 months per document. For fiscal years 1972 to 1975, NIOSH transmitted from 5 to 7 criteria documents a year to the Department of Labor. In fiscal year 1976, we transmitted 29 criteria documents. Our current schedule calls for 24 documents a year.

Increasingly, we are developing single documents covering groups of substances with similar chemical, toxicological or pharmacological characteristics. We are also developing documents on industrial processes such as coal gasification, coal liquefaction, roofing, and welding. These process documents will be based on a number of single hazard criteria documents which we will update and relate to specific industrial processes.

We are presently developing a criteria document that will contain a recommended standard for exposure to pesticides during their manufacture and formulation. This document will provide recommendations covering the

majority of the 1,800 pesticides listed in the 1976 edition of the NIOSH Registry of Toxic Effects of Chemical Substances. Of the 96 criteria documents planned for fiscal year 1978-1981, 24 will deal with single chemical compounds and the remaining 72 will cover groups of compounds or workplace processes. Based on these estimates, we expect that in addition to the 1,800 pesticides previously mentioned, the NIOSH criteria documents oriented toward groups of hazards, and processes or industries will cover more than 3,000 hazards by 1981. Thus, the Institute will be developing recommended health standards which will apply to over 4,800 chemical and physical agents during this period.

The GAO Report criticized NIOSH and OSHA coordination in the development of standards. It has always been our policy to invite OSHA to participate during our criteria document reviews. Furthermore, we have offered OSHA our assistance in translating criteria documents into occupational health standards. We have conducted research to answer their specific questions that have arisen during the standards development process for asbestos, coke ovens, 14 carcinogens, vinyl chloride, lead, cotton dust, benzene, sulfur dioxide, and beryllium. We have also provided experts to testify at all OSHA public hearings and assist in the questioning of witnesses.

We would agree with GAO, however, that NIOSH and OSHA have had difficulty synchronizing our efforts in developing standards. We will work closely with the present Assistant Secretary of Labor for Occupational Safety and Health, Dr. Eula Bingham, and her staff to resolve any remaining problems in this area. Our regular monthly meeting with OSHA at both the policy and working level have proven helpful in coordinating our programs. We also have many staff level contacts outside the context of these regular

meetings. We believe it is important to coordinate our work in this area so that standards can be established which effectively control workplace exposures. We do not agree with GAO, however, that the criteria document production should be limited to the number of standards that OSHA is able to promulgate. Criteria documents have a value even before being translated into enforceable standards. They are widely distributed and many companies use them as a basis to control hazards even though the documents do not have the force of law. They provide a thorough review of the existing literature and state of knowledge on a hazard and serve as an impetus for further research by NIOSH and others. They are also being utilized by other government agencies and by international bodies such as the World Health Organization as the basis for developing international permissible limits for occupational exposures.

CARCINOGEN POLICY

NIOSH supports GAO's recommendation that a uniform policy be established for identifying and regulating cancer-causing chemicals. We have always attempted to evaluate all data relevant to establishing a recommended occupational standard and have placed primary importance on any data relating to carcinogenicity in experimental animals or humans. Criteria documents now contain a separate subsection in which the data pertaining to carcinogenicity is summarized and highlighted.

Scientific opinion on the kind of evidence used in classifying a substance as a human carcinogen has been changing over the past few years, and NIOSH policy has reflected some of those changes. Certain experimental techniques, such as in vitro assays, have only recently been available and the use of individual case reports is given greater weight than in the past. As new information has become available on carcinogenicity, NIOSH

has revised a number of criteria documents. When NIOSH initially developed criteria documents on benzene, beryllium, and chloroform, we presented data giving some indication that the substances might be carcinogenic. However, in all three cases we considered the data inconclusive at that time and did not label the substances as suspect human carcinogens. After the documents were transmitted, new information on carcinogenicity became available. As a result we reassessed our earlier position and labeled all three substances as carcinogens and transmitted revised recommended standards to the Department of Labor.

RESEARCH

Approximately 70 percent of the Institute's research is directed toward developing or modifying criteria for recommended standards to prevent future occupational exposures. The current research program is focused on the following seven categories that we feel deserve special emphasis: general research in support of standards, occupational carcinogenesis, respiratory disease, reproductive hazards, control technology, safety, behavioral and motivational factors, and energy.

It is clear from the legislative history of the Occupational Safety and Health Act that Congress also intended for NIOSH to conduct some research not directly related to developing criteria for recommended standards. Some examples of this kind of research include behavioral research on how job stress affects health and job performance, development of analytical methods, development of personal protective equipment, and development of a more adequate surveillance system. We also attempt to strike a balance between short-term research needed to assist OSHA at a standards hearing or with a compliance problem, and long-term research that will assist in developing criteria for standards in the years to come. We

believe that the GAO Report failed to recognize the need for research not directly related to providing data for recommended standards, as well as the long lead time required for much of our research programs. In addition the GAO Report did not give adequate recognition to our increased emphasis on monitoring the achievements of our research program. Within the last 2 years we have instituted a sophisticated program planning and evaluation process to establish and monitor progress towards well defined objectives. This evaluation system allows NIOSH not only to monitor achievements but also identify potential problems for early resolution.

WORKER NOTIFICATION

NIOSH research provides evidence that large numbers of workers have already been exposed and are continuing to be exposed to a wide variety of potentially harmful chemical and physical agents. Most of these workers are unaware of how these exposures may affect their health. When we testified before this committee last month, we were asked to provide estimates of the resources involved in at least notifying those workers whose records were examined during NIOSH epidemiologic studies of their potential exposures.

In reviewing our research activities for the past 10 years, we have identified thirty-five epidemiologic studies directed toward over twenty-five different regulated substances. These included five regulated carcinogens and four substances that we have recommended be regulated as carcinogens. These NIOSH studies involve over 100,000 workers. This does not include other workers at the same plants whose records we did not review and workers exposed to the same substances at plants we did not study. It also does not include workers whose records were examined in research programs conducted by other Federal agencies.

We currently estimate that it would cost us more than $300,000 and 10 to 30 man-years to notify those individuals whose records we have on file of their past occupational exposure. This would cover the costs of obtaining addresses, composing, printing and mailing letters, and operating a hotline to answer questions resulting from the letters. These costs assume that NIOSH would have access to services of the Social Security Administration and the Internal Revenue Service in obtaining last known addresses of the individuals to be notified. Again, this cost extimate does not include the resources needed to inform any potentially exposed individuals not specifically included in our studies.

We estimate that it would cost perhaps $24 million each year to provide appropriate medical surveillance to the same number of workers. Such medical surveillance could vary from a one time simple physical examination for a former worker exposed to an organic, agricultural dust to considerably more complex examination that would need to be provided once or twice a year for the lifetime of a worker exposed to a carcinogen. The substantially increased costs of providing a system for medical follow-up could prompt the decision to limit Federal responsiblity to the more manageable task of notifying workers. While we do not feel it is a Federal responsibility to provide medical care for such exposures, we feel that NIOSH should provide leadership in working with other Federal agencies, State, and local government, private industry, academic institutions, and unions in a cooperative effort to assure that individuals desiring followup have access to medical care. For example, we could make medical surveillance recommendations developed during the Standards Completion Program available to those in the medical community who may need additional information about examinations for exposed workers. We could work jointly

with the National Cancer Institute to develop recommendations for medical surveillance of people exposed to chemical carcinogens.

Clearly workers have a right to know whether or not they are exposed to hazardous chemical and physical agents regulated by the Federal government. However, this right is linked to a complex series of problems which must be resolved if we are to take seriously the right that "no employee will suffer diminished health, functional capacity, or life expectancy as a result of his work experience."

The following are among the major gaps in dealing with past exposures to occupational health hazards:

.The widespread use of trade names makes it difficult to know exactly what substances are used in the workplace. The lack of consistent monitoring and recordkeeping makes it difficult to assess worker exposure to individual agents.

.There is no mechanism for notifying and providing medical care to workers who have left their jobs for one reason or another.

.Workers covered by the Occupational Safety and Health Act have not been provided transfer and wage retention protection when their functional capacity has been impaired or when they are at increased risk of illness as a result of occupational exposure.

.State workers' compensation systems do not adequately identify or equitably deal with occupational health problems. Diagnosed occupational diseases are generally not adequately compensated and little or no provision is made for workers who have been exposed

to toxic agents, including carcinogens, but who are not yet clinically ill.

.Most existing health insurance policies do not provide for diagnostic procedures or follow-up examinations made necessary by workplace exposures.

Much has been said about the high costs to industry and ultimately to the consumer of instituting more stringent occupational safety and health standards. However, if the hidden costs of past and present workplace exposures were clearly identified and borne by the industries exposing workers, we believe that it would be less costly to society, as well as to the industries involved, to institute controls that would ensure workplace exposure levels that will prevent occupational disease.

Mr. Chairman, we will be pleased to answer any questions that you or members of your Subcommittee may have.