

FILE NAME: Pennsylvania (PA)

DATE: 1961 May

DOC#: PA024

DOCUMENT DESCRIPTION: Johns Hopkins University Report - Pennsylvania Health

PENNSYLVANIA HEALTH

*REPORT OF A STUDY OF HEALTH
· NEEDS AND RESOURCES OF PENNSYLVANIA
BY
THE SCHOOL OF HYGIENE AND PUBLIC HEALTH
OF
THE JOHNS HOPKINS UNIVERSITY*

MAY 1961

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OCCUPATIONAL HEALTH

I. Scope of Study

The purpose of this study as originally defined was to determine a) the needs of the Commonwealth with respect to an occupational health program within the Department of Health, b) the adequacy with which these needs are met, and c) such changes that might be necessary to bring about a match between the two. It is possible within the time and staff limitations of this section of the study to determine the first point, need, only in a general way; hence, the defined goal has been achieved only in part. Conclusions have been reached and recommendations developed by applying the criteria of good industrial health practice to the limited observations made in the study.

A. Methods Employed in the Study1. Personel interviews and conferences were held with:

- a. Administrators and professionals in the Bureau of Environmental Health and its Division of Occupational Health, at Harrisburg.
- b. Administrators and specialists in other departments of the state government:
 - 1) Labor and Industry
 - 2) Mines and Mineral Industry
- c. Regional offices at Philadelphia and Pittsburgh.

2. Reports of the Division have been reviewed.3. Case records in occupational disease claims on file at the Workmen's Compensation Bureau have been reviewed.4. Conferences have been held with the Citizens Committee, and individually with some of its members.

- B. Limitations. The scope of the study is limited to a development of good judgements as to the best occupational health program for the Commonwealth at this time, with only general considerations of the administrative machinery needed for its accomplishment.

II. Progress Since 1948

The 1948 Survey spot-lighted certain problems with respect to

- a) the difficulty of fitting occupational health activity into the standard public health framework, and
- b) the difficulty of drawing lines around the activity so that it does not become an independent public health effort.

Thus, in Keystones of Public Health of Pennsylvania we find discussions of the activities of the Division of Industrial Hygiene under Adult Health, and again under Environmental Sanitation; and we find complaints of the drive for an autonomous occupational health operation complete with its own physicians, engineers, sanitarians, nurses, dentists, health educators, and laboratory.

Essentially, two ideas seem to be in conflict here. On the one hand, occupational health is considered a man-centered specialty where practitioners use any discipline they consider useful for the solution of a given problem; and, on the other hand, occupational health is classified as a sub-discipline of environmental science.

A. Administrative Location of Occupational Health Activity

The consultants who conducted the 1948 Survey evidently leaned toward the view that industrial hygiene is man-centered. They found the Division of Industrial Hygiene in the Bureau of Health Conservation (organization chart, p. 32, Keystones); they recommended its continuation there in the Interim Organization chart (p. 34); and they left it in this location in the recommended Ultimate Organization chart (p. 35). This recommendation was not followed. We now find the Division of Occupational Health in the Bureau of Environmental Health.

Each solution has advantages and disadvantages. The occupational health activity is partially at home in either place, and partially a misfit in either place. The fact that the first major recommendation in Keystones was not accomplished, despite the fact that this failure is not of itself critical.

B. Personnel of the Division

The changes in numbers and classifications of personnel since the Keystones are shown below.

1948	1961
Bureau of Industrial Hygiene	Division of Occupational Health
Physicians - 3	Physicians
1, Chief of Bureau	1, Chief of Division
2, Heads of District Offices	3, Central Office
	1, Employee Health Service
12, Central Office	Home Office and
12, District Offices	District Offices
Laboratory Technicians - 6	Laboratory Staff - 15
4, Central Laboratory	10, Central Laboratory
2, Field X-Ray Technicians	5, Field X-Ray Technicians
Nurse, Consultants - 2	Nurse Consultants - 2
Sanitarians - 20	Employee Health Service
	Nurses - 9
Total professionals 55	Total professionals 61

The bare facts do not tell the story. Following the Keystones report, there was a steady deterioration of personnel quality in the Bureau of Industrial Hygiene. The State's salaries, low but competitive during the war because of wage and price regulations, became unrealistic as industrial salaries increased in the post-war years. The trained industrial hygienists of the Bureau--especially the better ones--left the state service for jobs in private industry. The residue, the less competitive among the trained industrial hygienists and the corps of untrained sanitarians, carried on the Bureau's work in a decreasingly satisfactory fashion. The merit system principles of civil service were available; but in consideration of the practical problems that could not be surmounted, these principles were not applied by the Bureau Chief then in office. When, because of outside pressure, the civil service principles were applied, a succession of personnel changes followed.

The Bureau became a Division, the present Director was appointed in 1955, civil service examinations became a requirement of employment, and the salary scales were subsequently raised substantially.

In spite of the fact that the gross number of employees in industrial health operation has not changed materially (55 in 1948 as compared with 61 in 1961) certain program changes have resulted in a substantial net gain in terms of intensity of application of industrial hygiene talent to the Division's work. In 1948, the old Bureau carried full responsibility for the atmospheric pollution control program, whereas now the administrative component of this program has been set up independently; and the industrial hygiene work of Philadelphia County is now shared with the County's Health Department. Of the 30 industrial hygiene engineers, eight have masters degrees in this field and all are college graduates with intensive in-service training. Of the three physicians in the old organization, two were retirees from previous careers. Today there are five physicians. Four of these are board-certified or board-eligible in occupational medicine, relatively young, and in their most productive years. The remaining one is a young man with good general training in medicine. The central laboratory has a chief who competed successfully for his post in civil service examinations. With him are six well-qualified graduate chemists and four laboratory technicians. Consequently, although the quantitative change from 1948 to 1961 has been minor, the upgrading of quality has been impressive.

C. Program Changes

Although the present program of the Division of Occupation Health is summarized elsewhere in this report (Section III, B) it is appropriate here to point out differences between the program of the old Bureau as reported in 1948 (Keystones) and the activities of the present Division.

The gross differences consist of:

1. Transfer of the atmospheric pollution control program out of the Division
2. Development of an active program of radiation health, particularly as this relates to use of radiation in the healing arts.
3. Development of an employee health service for the Commonwealth employees.

Differences in ways of operating since 1948 may be summarized as follows:

1. Greater emphasis has been given to physician-participation in the Division's activities, at the clinical and epidemiological levels.
2. Industrial hygienists and chemists stand on their own professional feet. Each group has a chief, responsible for professional quality. The common effort is served by cooperation rather than by direction.
3. Although the goal of operating through the regional health organizations has not been fully achieved, a way to do this has been found. Given a good regional health officer, a good industrial hygiene engineer is assigned to his staff. They work together as physician and engineer. Their most technical problems are attacked by bringing in additional specialists from the central staff, and the support of the large, central laboratory is brought in as needed. This scheme represents a heartening breakthrough in the effort to integrate occupational health activities in the total public health program, a goal repeatedly called for in Keystones.
4. There has been a tightening of the control effort once plant problems come to light. Where a survey once ended in pious recommendations that were filed and forgotten, there now is careful follow-up and insistence upon compliance with requests for improvement in environmental conditions and/or industrial practices.
5. The general level of performance, difficult to compare at two different points in time by two different observers, is none-the-less considered to be much

higher now. Certain euphoric language appears in Keystones (p. 246), revealing that the investigators of that time may have been "taken in" a bit. A more sophisticated group would have looked twice before accepting the following self-appraisal of their hosts.

- "1. The control of the environmental factors of industrial health. This goes far beyond the negative phase of protection from harmful conditions and attempts to achieve the most healthful environment possible
- "2. Attention to medical services with regard to those causes of diminished efficiency, absenteeism, illness, or death due to industrial factors.
- "3. Attention to the general health of the industrial workers, relating to such factors as nutrition, mental health, and those illnesses which attack any group of people of similar age groups."

D. Specific Keystones Recommendations

The fate of six recommendations carefully spelled out in Keystones is summarized below.

1. Location of the occupational health activity in a separate bureau under an assistant secretary of health conservation (p. 35). Not done.
2. That the principal staff positions be supported by Commonwealth appropriations, thereby freeing federal funds for program extension of pilot-project bases (p. 259). Done.
3. That written agreements be developed with the Department of Labor and Industry, spelling out in detail a working arrangement for occupational disease control (p. 260). Not done.
4. That policy and procedure be clarified as regards industrial hygiene activities (broadly considered) of the several components of the Health Department. Done.
5. That salary schedules be brought into line with responsibilities (p. 261). This was done once, but needs re-doing.
6. That "a systematic compilation of information concerning industrial plants for the purpose of evaluating the industrial hygiene problems of the state" be accomplished. Done.

Certain recommendations exist by implication rather than direct statement in Keystone (p. 271). The status of these is summarized here.

- a. That plant inspections be carried on by fully trained professionals rather than by sanitarians. Done.
- b. That closer integration be achieved with the Department as a whole. Done.
- c. That the old Bureau should divest itself of certain health education and public health nursing functions. Done.

III. Evaluation of Existing Programs

A. Background considerations

There is a dispersion of occupational health activities through three major departments of the State government: Health, Mines and Mineral Industries, and Labor and Industry.

Dispersion of industrial health activities takes the form of a multilocation of function rather than transfer of appropriations. Responsibility for occupational disease control has been lumped with industrial accident prevention as a function of the Department of Labor and Industry; and a similar pairing of responsibilities has occurred in the program of the Department of Mines and Mineral Industries. There is a discernable power struggle among the persons involved in this situation, and it is this which may present a final obstacle to effective industrial health activity in the State. In all fairness, it should be pointed out that power struggles of this sort are not unique to the present group; they are to be found in other state governments, the Federal government, in the military, in industry, and indeed, may be said to be a fundamental characteristic of all organized human activity. We shall deal here, then, with a social rather than a personal problem and attempt to keep discussions clear of personalities.

The best administrative location of the State's industrial hygiene program can be logically determined only when there is agreement as to the objectives of the program. If the objective is limited to the control of occupational diseases, the program can be located in the Department of Labor and Industry quite as well as in the Department of Health. This is the practice of four major industrial states at the present time, as well as in certain other countries that are considered to have problems of this kind under reasonable control. If, on the other hand, the objectives are to include some broad ideas of health improvement of persons of working age, then the best location of the activity is in the Health Department.

Irrespective of how broad the program's objectives ultimately might be, there is a first obligation to achieve effective control of occupational diseases. This calls for setting standards of industrial operation, inspection of work places to see that standards are all maintained, and a good system of occupational disease reporting that will serve as a continuous audit of the program's effectiveness. The weakest leg of this tripod is the last, reporting.

The Division's Director is able to get reports of some 1600 cases of occupational disease per year. These come by various channels: certain compensation records, plant inspections, death certificates, and letters from workmen. By reasonable application of good reporting data from other states, it seems likely that the true incidence of occupational diseases in Pennsylvania is at least 10,000 cases per year, about six times the presently recognized number. An indication of the kind of trouble this situation can lead to is the sudden revelation, as a result of field study, of a great number of cases of silicosis in the bituminous industry around Johnstown, despite the fact that all have been sure that silicosis is no problem in any bituminous district in this country. Surely cases have been diagnosed from time to time by private medical practitioners or industrial physicians in the Johnstown area. A failure to register discovered cases at a central point has served to mask most effectively this major epidemic.

Occasionally occupational disease problems get defined by formal epidemiological studies that make use of advanced public health methodologies. In this situation there is comfort in finding the occupational disease control function located in a health department. An illustration in point is a recent study by the Division of Occupational Health, of the possible occurrences of beryllium disease at a plant. The best understanding of this problem depended upon findings among residents in the neighborhood of the plant as well as the employees, involving procedures well-known to public health specialists.

An essential requirement of occupational disease control is that the employer must be held financially responsible for failures. This means that compensation for disability must be fully borne by him, which is not the practice in Pennsylvania. It is impossible to find a substitute for cost-control as a motivating interest in occupational disease prevention. Nothing else works seven days a week, 24 hours a day, and in the absence or presence of inspectors. Along with this must go absolutely first-class administration of the workmen's compensation laws, with decisions based upon scientific facts rather than the need to solve socio-economic problems of a general nature.

3. Actions on Complaints, Cases, or Inspections:

- a. Industrial disease investigation. Upon receipt of information concerning a case of occupational disease--suspected or established--an investigation is made by one of the Division's physicians. The patient is visited and possibly examined, the work place is investigated, and the employer interviewed.
- b. Measurement of atmospheric pollution problems, prior to corrective actions by the Air Pollution Control Division (in this same Bureau).
- c. Hazards correction recommendation (specifications and/or actual design).

4. Service Program Promotion

- a. Plant Health Services. Various opportunities afforded by the activities of the Division are exploited to persuade employers to provide formal, in-plant industrial health services.
- b. State employee health service. The Division has in development an on-the-job health service for the State's employees who work in Harrisburg.

5. Research

- a. Survey of coal miners for silicosis. The responsibility for conducting an epidemiological study to determine the prevalence of chest diseases among coal miners is shared with the Department of Mines and Mineral Industries. Division of Occupational Health is responsible for the following phases of the study which include the taking of 14" x 17" chest x-rays of miners, interpretation of the x-rays films, recording of occupational histories, and making measurements of vital capacity. Correlation of x-ray findings is made with dust count data obtained during surveys of mines.

The Department of Mines and Mineral Industries is responsible for conducting surveys of coal mines and for making the necessary dust counts. Personnel of the Division of Occupational Health have provided training in the techniques used in this work.

- b. Beryllium clinic. Following an in plant and community study the Division of Occupational Health has established a beryllium clinic in Reading. This has the approval of the Berks County Medical Society. The purpose of the clinic is to assemble a group of beryllium cases to test new methods of treatment; to evaluate diagnoses; to standardize treatment; to provide consultation on request; and to provide out-patient care to persons unable to afford the services of a physician. Laboratory services are performed in accordance with the needs of any particular case. Funds for operation of the clinic are provided by a research grant from the U. S. Public Health Service.

C. Occupational Health Activities in Other State Departments

Occupational health activities have developed within the hegemonies of two other major departments of State government: Labor and Industry, and Mines and Mineral Industries. The circumstance results from a logical development of the concern for accident prevention, and followed closely upon passage of early workmen's compensation laws almost 50 years ago.

The efforts along accident prevention lines as carried out in these two departments were enormously successful, as they have been generally throughout American industry. Three standard instruments were used: 1) a workmen's compensation law that made employers

Hearings before the Workmen's Compensation Board should be at a technical level which is adequate to determine the facts of diagnosis and disability in a given occupational disease case. Physicians and engineers, and perhaps referees as well, vary in their capacity to develop these facts. Every practical effort should be made to use the best talent available. A finding of liability in the face of a well-run control program has implications beyond the case at hand: the control program itself is brought under challenge, and there may even be a legitimate doubt that the involved industry can be operated safely.

Among the broader purposes of occupational health is the use of employed populations to study one or another chronic disease. Examples of this are beginning to appear in the literature, the studies for the most part being conducted by the medical departments of large industrial firms. Representative payroll groups can be brought under observation in such a way as to support generalizations regarding the health problems of the working populations: morbidity and mortality rates by age, sex, race, type of employment, and income level; and further generalizations regarding the socio-economic implications (for both employer and employee) of these health problems. Activities of this kind should be reserved for the future as far as the state's occupational health program is concerned. On the basis of first things first, the urgent need is to find and prevent occupational diseases.

B. Existing Programs

The Division carries on an impressive level of activity. From this it is possible to separate out about a dozen programs, two of which are justifiably called research projects. The judgement is offered that each of these is a real necessity. All programs are slightly understaffed. Within limits, this probably is a good way of operating, there being a point of diminishing returns in the economy of capable personnel. The programs are listed below, arranged in an organized fashion.

1. **Industry Inventory.** The industrial establishments of the state are systematically visited by trained industrial hygiene engineers. Records are made of the nature of the enterprise, the potentially hazardous materials and processes in use, and the control measures found as well as those recommended. When considered necessary or useful for future use, samples are collected for subsequent analysis in the laboratory at Harrisburg. All information is entered on rapid sort cards which are revised from time to time.
2. **Hazards Search and Case Finding:**
 - a. **Radiation exposure to operatives and the general public by physicians and dentists, and to those employed where radiation is used commercially.** The concern is with both high energy sources and radioactive isotopes.
 - b. **Exposure to microwaves at radar stations.** Microwave exposure in connection with induction welding is a point of special attention in the industry inventory (1, above).
 - c. **Occupational exposure to noise, both impact and steady state.**
 - d. **Chest survey.** A mobile unit which can produce 70 mm. chest roentgenograms is in constant use, booked a year in advance--usually in response to specific requests by industrial management and/or labor groups. For the sake of operating efficiency, the service is restricted to plants employing 50 or more people.
 - e. **Exposures to agricultural disease hazards: nitrogen oxides in silos, pesticide sprays.**

- c. **Inspection.** Inspects all buildings where labor is performed and issues licenses for movie projectionist and private employment agencies. Inspects boilers, elevators, mines, and quarries for safety. Also regulates the storage, use and handling of explosives. Regulates manufacture of bedding and upholstery.
- d. **Research and Statistics.** Prepares reports of industrial injuries, cost of living, and makes wage surveys for Minimum Wage Boards.
- e. **Workmen's Compensation Board.** Decides on appeals of workmen's compensation cases.
- f. **Workmen's Compensation Bureau.** Approves all workmen's compensation paid to injured workers. Recently this bureau has accepted responsibility for administration of occupational disease claims against the Commonwealth's funds. An attorney was engaged to direct standard, formal defense measures. His early efforts have stopped many claims that would otherwise have been routinely settled. It is felt that the splendid defense performance would be further enhanced by expert medical assistance from specialists on the staff of the Division of Occupational Health. This action is one of the recommendations of this report.
- g. **State Workmen's Insurance Fund.** "Sells Workmen's Compensation Insurance to Employers. Works closely with the Bureau of Rehabilitation on occupational injuries." Actually, this is an insurance company with a directorate spread through the state government. It insures the small firms that commercial insurance firms will not carry because of their small size or poor-risk ratings.
- h. **Rehabilitation.** Assists disabled to become self-supporting through retraining; provides medical treatment, prosthetic appliances and maintenance during training period.

It may be seen from the foregoing that the Department of Labor and Industry is empowered to set regulations and standards for the purpose of preventing occupational disease, carry out inspections to enforce the regulations, sit in judgement on disability claims brought before it, pay out awards when the judgement favors the claimant, submit evidence to support the claimant's case, organize a defense against the claimant, and, finally, see that the claimant is rehabilitated.

As might be expected, there is much compartmentalization of information and of planning. No one person interviewed had an overall picture of the occupational disease problem, nor expressed any hope of ever getting the picture. No one has any idea of a simple bit of information upon which effective programming must be based: the number and kinds of occupational diseases that occur in the state.

In this situation it has been possible for the Division of Occupational Health to develop and carry on a program of occupational disease prevention as a result of aggressive action rather than because of top level agreement or terms of reference in the state law. Legal authority actually rests with the Department of Labor and Industry; whereas action has been assumed by the Division of Occupational Health simply because it has the people who know how to do the job. It is necessary to resolve this conflict.

2. Department of Mines and Mineral Industries

This Department has as one of its principle concerns the maintenance of safe working conditions in coal mines. Again, this goal has been achieved most impressively with respect to reduction of the accident rate. A corps of experienced, reliable mine inspectors has been developed over the years. These men are specialists in a field closely related to but not exactly in occupational disease prevention.

financially liable for industrially sustained disabilities and the related surgical and hospital care; 2) a system of workmen's compensation administration that arrived at decisions quickly, and tended to interpret facts liberally in favor of the injured worker to the point that the workmen's compensation law is now considered a modified form of social insurance rather than a modification of the law of torts; and 3) organizations of factory and mine inspectors with authority to enforce safety measures. This has been a standard approach across the country, and it has worked uniformly well in all states.

In the late 1930's, the workmen's compensation law was enlarged to cover a list of occupational diseases (so-called "schedule act"). About 20 years later this was enlarged further to cover any and all occupational diseases. Also in the late 1930's the Bureau of Industrial Hygiene was transferred to the Department of Health as a technical and laboratory activity. The legal underpinning for this activity, however, is in the General Safety Law which remained in the Department of Labor and Industry.

There was subsequently passed an "Occupational Diseases Act", which was separate from the workmen's compensation law and which, despite its title, dealt only with silicosis and anthracosilicosis. With this came a set of concepts unique to the Commonwealth. To our knowledge, they are a pure invention and have no precedent anywhere else in the world. These points are:

- a. An occupational disease covered by this act is one which by definition takes five years or more of an industrial exposure for its development.
- b. To qualify under the law, the claimant must have sustained the exposure for two out of the past 10 years through employment in Pennsylvania. (In practice, these two years need only be in the industry and not at a particular kind of work.
- c. If the claimant was employed by a single employer in Pennsylvania during the exposure years, the Commonwealth pays 40 per cent of the compensation award and the employer, 60 per cent.
- d. If the claimant worked for more than one employer during the exposure years, the Commonwealth pays 100 per cent of the compensation award.

The last requirement is satisfied by virtually all claimants for compensation for disability for silicosis and anthracosilicosis, corporate maneuvers having been devised to ensure interruption of continuous life of coal mining companies. The amount of compensation paid out of the state treasury to claimants under this law now exceeds \$1,000,000 per month. A perfectly sound concept of social legislation - workmen's compensation for occupational disability for the ultimate purpose of occupational disease prevention - was cynically perverted to a dole in an attempt to alleviate the economic repercussions of a failing industry. Only recently has an activity been started to bring some semblance of responsible administration into this picture.

1. Department of Labor and Industry

The total impingement of the Department of Labor and Industry upon the occupational disease problem is fantastically complicated. A total of eight Bureaus have activities in this field, as follows:*

- a. Industrial Board. Considers appeals of laws affecting labor and approves all safety devices requiring approval.
- b. Industrial Standards. Develops industrial safety regulations and revisions and recommends action for approval of safety devices and equipment.

*From the directory of the Department of Labor and Industry, current as of the spring of 1961.

representative of a given industry (or, alternatively, harboring representative exposure to a given substance within that industry) should be selected for study. Correlations should be sought between environmental characteristics and selected health parameters, viz., incidence and severity rates of illness by diagnosis, absenteeism, and clinical findings at times of the periodic health examinations ordinarily provided by industrial medical departments. A search should be made for known as well as previously unsuspected relationships between chronic disease and the nature of employment, to provide a better basis than we now have for establishing safe limits of exposure.

- b. **Health of the Work Force.** Representative payroll groups should be brought under observation in such a way as to support generalizations regarding the health problems of the working populations: morbidity and mortality rates of illnesses by age, sex, race, type of employment, and income level; and further generalizations regarding the socio-economic problems (for both the employer and the employee) resulting from the health problems.
3. The Division should assume leadership in the development of further legislation in the occupational health field as may be found necessary through its continuing, broad-gauged studies. Recommendations for new legislation should be supported by carefully analyzed data. The Division's target in this regard should be a high level of health for the work force.
- B. **Applicable to other departments under existing law**
 4. A physician of the Division of Occupational Health should be attached to the staff of the Director the Workmen's Compensation Bureau, Department of Labor and Industry. This should be an ad hoc assignment to assist in the development of medical facts needed in the administration of claims for disability from silicosis among miners. The Division's physician should work as a consultant to the Workmen's Compensation Bureau's defense counsel. A useful by-product of this service would be the opportunity for first-hand observations by the Division's physician on a large number of cases of silicosis.
 5. An industrial hygienist of the Division of Occupational Health should be attached to the mine survey group employed by the Department of Mines and Mineral Industries to assess the air borne dust in coal mines. This should be an ad hoc assignment for the duration of the present research project which seeks to correlate levels of dustiness with the occurrence of industrial lung disease among coal miners. The responsibility of the industrial hygienists would be to make sure that the air sampling and dust counting of the mines group is constantly in line with what is needed in the research project.
 6. The resources of the Division of Occupational Health should be used by the State Workmen's Insurance Fund to reduce its losses. The Fund exists to provide insurance coverage for high-risk accounts which the commercial insurance companies will not carry. Usually the insured parties are small employers whose risk cannot be estimated actuarially because of the small number of people involved; and, all too frequently, they actually are poor risk because of the hazardous nature of their business. In this situation, a commercial carrier would employ competent personnel to conduct an aggressive loss-prevention program. The State Workmen's Insurance Fund has available to it a high-quality service of this type for the asking. Again, a useful by-product would be first-hand information on high-risk industrial establishments, for more general application elsewhere in the activities of the Division of Occupational Health.

The discovery of a great many cases of silicosis among bituminous miners as a result of a field study of the Division of Occupational Health has broken wide open the whole question of the need of more stringent dust control in the bituminous industry. A standard way to study this calls for correlations between the work environment and degrees of lung involvement. When this relationship is understood it will be possible to recommend the most practical methods of prevention. An investigation of this kind must be closely supervised in every detail by the principal investigator. It turns out that the mine operators do not want to admit the Division's industrial hygienists underground, as a result of which the Department of Mines and Mineral Industries hired experienced mine foremen, enrolled them in a short course of training in dust counting, and made them responsible for the quantitative aspects of the dust counts needed in this study. Trained industrial hygienists of the Division should be readmitted to the mines to work closely with the employees of the Department of Mines and Mineral Industries on this project. Thereafter, there should be the closest cooperation between the Department and the Division to ensure working conditions that will produce no new cases of silicosis. Industrial hygiene at this level of performance is a specialized profession, and not a simple skill that can be picked up as a side-line and practiced as a part-time endeavor.

IV. Summary

The body of state law pertaining to occupational health in Pennsylvania has grown piecemeal in response to the pressures and needs at given times. Occupational health activities are spread through the state government, accommodations having been made here and there for the addition of new functions, authority and responsibility, all adapted to existing administrative structure in a pragmatic way. One sees results of practical compromise between the need on one hand to protect the work force from excessive social and health costs of industrialization and on the other, the need of business to meet competition in the price of its products. With each major problem approached on an ad hoc basis it was natural that an illogical administrative scheme should result.

The Division of Occupational Health, started as a specialized activity under federal auspices some 25 years ago, has become a major operation within the State Health Department. The Division is now impressively staffed with fully trained specialists, and has excellent physical facilities.

Pennsylvania's most urgent occupational health problems can be solved by bringing the technical resources of the Division of Occupational Health to bear upon certain occupational health activities now located elsewhere in the state government. Some less urgent problems, for the most part those already within the direct jurisdiction of the Division, have their solution in extensions of activities already under way within the Division. Still other problems can be solved only with entirely new approaches which, in turn, will depend upon new legislations.

V. Recommendations

A. Applicable to the Division under existing law

1. A blanket recommendation is submitted, that all of the existing programs of the Division be continued. Simply because there may be a tendency for it to be overshadowed by the other activities of the Division, special emphasis should be placed on further development of the employee health program, extending its benefits as widely as possible to state employees.
2. The Division should embark on long-term epidemiological studies that have related but different objectives: definitions of risk of occupational disease and basic health studies of Pennsylvania's work force.
 - a. Occupational Disease Risk. One industry after another should be studied to discover possible relationships between factors of the work environment and the health of workers exposed to that environment. A group of plants

7. After some experience has been gained under recommendation 4, the resources of the Division should be used for developing the technical facts of all workmen's compensation claims for occupational disease. In many cases the Division will already have useful background information on the industry and perhaps even on the particular plant concerned. In others, the Division should conduct environmental studies and perhaps clinical examinations of the claimant as well as other members of the work force, to develop the details needed for arriving at the best decision. Again, a useful by-product of this service would be the first-hand observations on a given plant and its work force in the real-life circumstances of solving an acute problem.

C. Applicable with new legislation

8. A reporting system should be developed which makes known to the Division every proved or suspected case of occupational disease soon after such a case is recognized or suspected.
9. Either by a new law or by a binding, written, inter-departmental agreement, there must be produced, a policy which defines the responsibilities of the departments -- Health, Mines and Mineral Industries, and Labor and Industry -- with respect to the control of occupational diseases. Recommendation No. 18 in Keystones (p. 260) is herewith re-submitted, together with an endorsement of the advice to follow the then existing agreement in California (Appendix X, p. 318, Keystones).