

A charter member of the American College of Preventive Medicine calls upon his colleagues to take a more active interest in the control of industrial forces damaging to public health.

The Occupational Health Challenge to Preventive Medicine

HUNTINGTON WILLIAMS, M.D., Dr.P.H.

IT IS a satisfaction to note that our American College of Preventive Medicine is now 5 years old. Our distinguished roster of members includes a fair number of top administrative physicians in State and local health departments and an occasional industrial hygienist who have played their part in providing health protection for sizable groups of employed persons whether in mine, mill, factory, on a farm, or in an office.

But most of our members must feel that they are remote from any responsibility in this field of endeavor. And it is to them that I would prefer to address my chief emphasis in these remarks.

Our college members who are not industrial hygienists per se have a need to feel that they can and should play an important role in the occupational health needs of their own State or locality.

How well is this work being done in your area? Is it getting enough in the budget? Is there enthusiasm for it at the top level? Would not its chief administrator welcome some support and encouragement from you? Remember that not many years ago very little was being done, and the successful programs of today began pretty much on a shoestring. Does this seem unexciting, or are you too busy with your own work? Is adult health protection less im-

portant than a school health program? What about air pollution control, or radiological health protection, or lead paint poisoning among 2-year-olds in the slums? You might be surprised to find that the man in charge would welcome some show of interest from you. You have a part to play if you are really interested in preventive medicine.

Dr. James M. Mackintosh of London, writing on trends of opinion about public health in England during the first 50 years of this century, said: "One broad feature which forms a background to the whole 50 years may be mentioned at this point; everyone says that prevention is better than cure, and hardly anyone acts as if he believes it, whether he is attached to Parliament, central or local government, or the commonalty of citizens. Palliatives nearly always take precedence over prevention, and our health services today are too heavily loaded with salvage. Treatment—the attempt to heal the sick—is more tangible, more exciting, and more immediately rewarding, than prevention."

Some 3 years ago, Sir Allen Daley, formerly medical officer of health, London County Council, and I presented a paper on "Public Health Practice: An Ounce of Prevention Is Worth a Pound of Cure," in which we quoted Dr. Mackintosh's statement (1). We asserted then that "if the health department [and for the moment you are all included in the health department] does not pay prime attention to prevention and avoid spending too much of its energy on administering curative medical services, no other agency in government will cultivate the great

Dr. Williams, commissioner of health, Baltimore, Md., presented this paper before the American College of Preventive Medicine at the 87th annual meeting of the American Public Health Association, Atlantic City, N.J., October 22, 1959.

untilled fields of preventive medicine." And we questioned whether the warning voiced by Dr. Mackintosh would be heeded.

We then discussed in some detail four untilled or partially tilled fields of prevention: mental hygiene, industrial hygiene, air pollution, and health education. Surely you will all agree that industrial hygiene or occupational health is a most important area of preventive medicine. Whatever your own major field of endeavor, you can play a part in improving the occupational health status of your community, if you will let yourself become intrigued a bit about it.

In many State health departments and in a number of the larger city health departments in the United States, a fair amount of inspection, abatement, and control service is done in protecting the health of industrial workers, but not nearly as much as could and should be done. As an example, in Baltimore, a city of about 986,000 persons, there is a lively program that has been built up over more than 30 years into a bureau of industrial hygiene and its specialized staff. This staff of 15 is made up of a highly qualified physician, Dr. R. R. Sayers, formerly in charge of all this work in the Public Health Service, 2 chemical engineers and 2 civil engineers, 2 expert laboratory chemists, 5 special inspectors, a public health nurse, and 2 stenographers.

The Baltimore City Health Department in the 1920's was called on to investigate complaints and occasional known cases of occupational disease. In 1925, the city passed a strong gas appliance ordinance and placed responsibility for its enforcement with the health department. There had been too many deaths from faulty gas equipment and tubing. A State law later made it mandatory for physicians to report all cases of occupational disease to the local health department which, in turn, was directed to study and control such causes of death or illness and adopt regulations for their prevention.

At first, plant management was skeptical of visits from the health department, but, little by little, confidence was established and real service was provided on a consultation basis. Today one plant's manager tells another to call for this highly qualified and protective guidance. The local medical profession has aided

greatly in developing this spirit of teamwork. Local industrial leaders of top rank in Baltimore now expect the city health department to concern itself with these matters. In fact, their Association of Commerce has established special health committees for self-policing and for co-operative health activities. The commissioner of health and his staff serve on these committees in an ex officio capacity.

Technical Studies

In 1958, among 56 technical studies made of toxic materials used in Baltimore industries, 8 may be mentioned as characteristic.

Foundry studies. Dust studies were made in five nonferrous foundries. The dust counts ranged from 1.5×10^6 to 19.7×10^6 particles per cubic foot of air. The sand preparation and the shakeout operation areas were indicated as needing attention. Management was notified to supply approved respirators for employees in dusty areas, to maintain and check the functioning of exhaust systems, and to minimize dust on floors traversed by mobile equipment. These suggestions were carried out.

Mercury float bed. Upon request, a "mercury float bed," located at the ballistocardiographic laboratory of a large hospital, was investigated for possible emission of mercury vapor. The patients lie on an aluminum tray which floats on the mercury. The motion of the tray, caused by blood flow and breathing, is measured, and electrocardiograms and phonograph records of the heartbeat are taken. Patients do not come in contact with the mercury, which has a silicone oil film to reduce vaporization. The study revealed the presence of mercury in the trap of a sink located in the room. The removal of a few cubic centimeters of mercury from the trap and additional cleanup procedures corrected the condition.

Radiation control. Investigation of 45 radio-isotope users revealed that the isotopes are used in the medical field for research, diagnosis, and treatment; in the industrial field for radiography and density gauge measurements; and in the educational field for research. In general, all users were found to be handling the isotopes safely, except for an occasional deviation from Atomic Energy Commission require-

ments, chiefly in regard to the proper posting of "hot areas" or the keeping of records. These conditions were corrected.

At the request of the Baltimore Department of Public Works, the health department began monthly monitoring of the radiation activity of the three city sources of water supply and the effluents of the two sewage disposal plants. Like the earlier air monitoring, these new checks are to establish baselines of information. These services will be continued.

Shoe-fitting machines. City Ordinance No. 1518, approved June 25, 1958, prohibits any person from maintaining or operating in Baltimore any fitting devices or machines which use fluoroscopic, X-ray, or radiation principles, for the purpose of fitting shoes in connection with the sale of footwear. Inspection revealed that all shoe-fitting machines were removed, or 45 machines from 43 shoe stores, attaining complete compliance.

Lead and silversmithing. A survey was conducted at two local silversmithing plants after a lead hazard was discovered in the Massachusetts silversmithing industry. Samples of dust from the sand-bobbing operation indicated no significant employee exposure to lead.

Formaldehyde eye irritation. Employees of two clothing stores complained of eye irritation. As in previous years, investigation showed that these irritations, which occur during warm weather, were caused by dust from cloth treated at the mills with a formaldehyde preparation in order to make the material wrinkle and shrink resistant. Installation of exhaust ventilation removed the cause of the eye irritation.

Court actions. During the year, court action was instituted against the owner of a drycleaning establishment who failed to provide adequate controls to prevent industrial surface drainage, and against the owner of an automobile repair garage who failed to provide adequate exhaust ventilation. Corrections were made in both instances.

Firefighters and carbon monoxide. Firefighters became ill while battling a blaze at a chemical plant, and the bureau was requested to investigate since there was speculation that the fire created hazardous airborne chemicals. It was apparent that the fire started in an air-

locked enclosure where paper bags and an inert ore, manganese dioxide, were stored. Combustion of the paper in the oxygen-starved air formed carbon monoxide. A sample of ore removed from the fire area showed that sufficient gas had been adsorbed by its surface to give a positive reaction for carbon monoxide.

Planning for the Future

Closely related to industrial hygiene and the prevention of the occupational diseases is the equally interesting and persistent present-day challenge of air pollution. Health departments long ago concerned themselves with the disposal of solid wastes and, more recently, with liquid wastes. How long will the public be content to watch the health officer in an industrial area sit by and take no part in the control of the purity of the air the citizen must breathe?

Let us look at a riverside industrial city that backed away from the problem of air pollution, or rather, did not approach it at all. A group of new industries moved into this community. For local, nearsighted, fiscal, and other reasons, the new plants were located directly to windward of the residential areas. The city officials soon knew and the whole city knew that they had not planned and built properly. Rather they had created for themselves the curative and expensive task of air pollution control, a task that could and should have been prevented. This is an aspect of town planning which does not always receive the attention it deserves.

Granted that these industrial controls constitute a difficult task; but what a challenge it is to preventive medicine and how rewarding you will find it if you let your interest increase and you become a part of it.

The technical studies are described in detail in the 1958 annual report by Charles E. Couchman, director of the Baltimore Bureau of Industrial Hygiene. The annual report is available upon request.

REFERENCE

- (1) Williams, H., and Daley, A.: Public health practice: An ounce of prevention is worth a pound of cure. *Baltimore Health News* 33: 41-60, June-July 1956.

Civil Defense Emergency Hospital



Civil defense emergency hospitals, austere but functionally complete, are stored in strategic locations throughout the United States. Equipment is packed in 351 boxes which fit in a standard moving van.

In a demonstration of civil defense training techniques, 40 employees of the Metropolitan Life Insurance Co. set up a 50-bed emergency hospital in the auditorium of the firm's New York office. After only a preliminary briefing, the casualty aid unit unpacked 95 boxes and set up the hospital equipment in 1 hour and 15 minutes and repacked the items in 45 minutes.

The complete hospital consists of an admitting-triage area, shock ward, operating rooms, pharmacy, laboratory, central supply section with sterilization facilities powered by gasoline or bottled gas, generator, and X-ray machine with polaroid development process.

The demonstration, held March 8, 1960, with the assistance and guidance of the training branch staff, Division of Health Mobilization, Public Health Service, was a field test to orient personnel to the hospital prior to its use in the division's training courses.

The first course, "Medical Aspects of Health Mobilization," was offered April 18-23, 1960, at the eastern instructor center, Office of Civil Defense Mobilization, Brooklyn, N.Y. Its purpose was to bring up-to-date disaster information and training to a nucleus of professional personnel concerned with medical and health needs of the civilian population in an emergency. Students were 104 physicians, dentists, nurses, and veterinarians from government, private industry, and the Armed Forces.

Two similar courses were given May 8-13 at the OCDM Staff College, Battle Creek, Mich., and June 5-10 at the OCDM western instructors training center, Alameda, Calif., for civil defense directors and personnel in planning, operational training, and supervisory activities in health and medical services aspects of civil defense.