

September 10, 1946

MEMORANDUM

To: The Director, National Institute of Health

In accordance with your request, I am attaching a list of research problems under way at this time in the Industrial Hygiene Research Laboratory.

The attached list of problems which we are studying cannot be considered hygiene in an industrial or general population until they can be applied generally. While it is the hope of the scientist that his work may ultimately be applied, it cannot be termed industrial hygiene or medicine or anything else until this ground work has been thoroughly established.

One is in a dilemma when he tries to draw a distinction between industrial hygiene research and general public health research because there is no such distinction. The result will be that all projects fall in both categories. The National Institute of Health is dedicated to research on health problems regardless of age, station, and occupation.

The differentiation between research projects should be made along the lines of fundamental and applied approaches, regardless of the industrial or non-industrial aspects of each problem. Thus problems in hygiene imply the application of knowledge established through prior research. Research, on the other hand, implies the establishment of knowledge which may be subsequently applied.

The Industrial Hygiene Division by definition is dedicated to the application of knowledge to the health of the industrial population. This definition does not include research aspects in a fundamental sense and certainly cannot substantiate the claim for cognizance of all problems which may have some bearing on industrial health; if so the whole activity of the Public Health Service would be under the control of such a group. Extending this argument, the National Institute of Health, which by definition applies itself to all problems of health,

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might claim cognizance of all the activities of the Public Health Service. It seems logical that research activity in a fundamental sense, whatever the origin of the problems, should be delegated to the National Institute of Health, and that the application of this work and that from elsewhere be delegated to specific divisions of the Public Health Service.

In the past, research activities and their application in industrial fields have been joint activities due to their relatively small scope. In the past several years, the ability to apply knowledge gained in the laboratory has been effectively amplified and decentralized, as seems proper, so that local conditions are satisfied by local authority. The separation of research and application is, in a large sense, a benefit to both, since emphasis on application always tends to cause hasty decision on fundamental matters and usually to their detriment, while research activities require a separate type of administration from that of service activities, especially so since, although a researcher may start out with an objective in mind, he may end up with this objective or with an alternative one or both, the direct applicability being unpredictable. Thus, the tendency to allocate problems of strict hygiene to local jurisdiction and to allocate research to central groups where intense analysis can be brought to bear is a useful result of the expanding social aspects of national health.

Research men must have some observational material with which to begin a study of a problem. Their observations invariably come from the action of some element of the environment on the living system, but it is no longer considered necessary to wait for industrial morbidity to be demonstrated before such work is initiated. However, it would be sterile to expect research to spring full fledged from the researcher's mind without reference to any application. The cues for research come from the development of new materials and the realization that new materials may have deleterious effects.

The basic question during the last portion of the conference was whether or not the present administrators of the Industrial Hygiene Division were competent for that position. Therefore, to transfer additional personnel, funds, space and equipment of a very specialized nature to the present Industrial Hygiene Division from a laboratory where they are functioning efficiently would not remedy the situation.

Research carried on in this Laboratory in each topic is not the responsibility of a single man, but is carried on in collaboration with several different disciplines and for this reason cannot be divorced from this Laboratory without placing serious limitations on the scope and execution of such studies. For the same reason, the equipment of the Laboratory is not at the disposition of a single individual or group, but is utilized by the different disciplines as the opportunity arises.

This reliance on several disciplines, and specialized procedures and equipment is not only restricted to the facilities of this Laboratory, but extends also to other Divisions of the National Institute of Health, as for example the Cancer Institute. For these reasons, it is not advisable to divorce this Laboratory from the National Institute of Health.

It should be pointed out that the evaluation of the toxicity and potential dangers of chemicals or of the effect of other environmental conditions cannot be based on the outcome of acute or chronic animal exposure experiments, but it has to take in account the physiological and biochemical changes involved in such toxic phenomena as may be observed. It has been shown in the past that the results of exposure experiments alone without detailed study of the mechanism of action has caused erroneous opinions regarding toxicity and potential dangers of such chemicals.

It should be emphasized again that detailed toxicologic studies cannot be made upon short notice and with a definite directive as to the results.

It should be mentioned that the present responsible personnel of the Laboratory is interested in fundamental research, and would not be willing to carry out investigations which do not allow the elucidation of fundamental questions. It is my opinion that if these men should be transferred to the Industrial Hygiene Division some would resign immediately, and others would resign as soon as possible.

Paul A. Neal, Medical Director
Chief, Industrial Hygiene Research Laboratory

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Attachment