

involving adverse influences from the patient's personality and his social environment, become more significant in the medical problem.

While social factors have been previously recognized as important in relation to medical care, the formulation of procedures has not been as complete for a thorough exploration of the social make-up as of the organic make-up. By use of the case method for the teaching of medical and nursing students in a few institutions, attention has been directed to the social aspects of medical care, and the complexity of chronic social conditions has been revealed while also observing chronic disease conditions. But the implications of many social influences have not been fully recognized or understood.

From the standpoint of the medical practitioner, it may be observed that this distribution of types of cases represents a hospital ward cross-section rather than a community-wide picture of social problems which may complicate the medical care of cases observed outside of the hospital wards. Conclusions drawn, however, are highly valuable as additions to the knowledge derived from medical social work, and from considerations of the various causes of depletion of body substance, fatigue and emotional tension. These manifestations seem of special importance in aggravating disability already started by organic disease. Adverse social factors thus apparently have significance in medical care chiefly because of their power to disable; and the claim is made that these factors expressed as deprivations, strains, and dissatisfactions have physiological effects. Convincing evidence is given that disability can be decreased by controlling adverse social factors affecting individual patients. For sound future development, it is urged that more accurate and concise terms be invented for expressing social factors and remedial measures, and that such terms come to be the habitual mode of expression of all who engage in the social work of medical institutions.

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THE CONTROL OF PNEUMONIA

THE final report of the Pneumonia Study in Massachusetts¹ conducted from January 1, 1931 to the end of 1935 by the Department of Public Health should be of interest because the control of pneumonia is becom-

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¹ Heffron, Roderick and Robinson, Elliott S.: Final Report of the Massachusetts Pneumonia Study and Service, 1931-1935. *The Commonwealth*, January-March, 1937, 24, No. 1.

ing an essential part of the public health program. The pneumonia study had two objectives, the evaluation of pneumonia serum under the conditions of the general practice of medicine, and the development of plans for the distribution of the serum for the treatment of those patients who might reasonably be expected to benefit from its use.

The important findings of the study are:

(1) *Epidemiological.* . . . Epidemiologic studies were made of cases, carriers, and contacts. Typing was carried out through most of the higher types, and for the first time it was clearly shown that, of all the types, only Type I and Type II were of special epidemiologic significance. Type I was found twenty times as prevalent in immediate family contacts of Type I cases as in the population at large, and Type II ten times as prevalent in its contacts. Investigation of cases showed that about 20 per cent of family contacts with Type I or II cases became carriers of these types, while only about 2 per cent of hospital contacts became carriers of such types. It was found that some factor in addition to contact alone was needed to determine the transfer of Type I or II pneumococci from patients to contacts, and this factor appeared to be the presence in such contacts of upper respiratory infections such as the common cold. Persons with colds in contact with Type I or II cases were likely to become carriers of these types, and the carrier state might persist for weeks.

(2) *Educational.* Efforts were made to acquaint physicians with the newer information available regarding pneumococcus typing, serum concentration and its relation to dosage, and the technic of treating patients with serum. Graduate courses, many special meetings, chiefly symposiums, and District Medical Society meetings were held in nearly all parts of the State to present these matters to the profession and to acquaint them with the pneumonia program.

(3) *Clinical.* During the first three years of the study, seventeen especially selected areas were organized for intensive work. In these, typing was done in twenty-eight hospitals by thirty especially trained technicians, and serum was available through seventy-eight collaborators in these areas. In addition, there were eight hospitals in Boston from which serum was available, and typing was done in seven of these. This organization served approximately one-half the population of the State.

A thorough investigation of the various methods of typing was made. The important result of this was that the Neufeld method was

found simple, rapid, and accurate, and was advised as a routine method of typing.

In 1934 it was obvious that by the end of the study in 1935, if the State took over the production and distribution of serum, it would have to be equally available to all physicians . . . and that . . . the distribution of the serum dispensed should be restricted for use only in early Type I and Type II cases. By the end of 1935 serum was equally available to all physicians in the State through the State Bacteriologic Laboratory and eight hospitals in Boston, as well as from fifty-seven hospitals outside Boston, making a total of sixty-six depots in all.

Records of 956 cases of lobar pneumonia treated with Type I and Type II anti-serum were analyzed and the results showed conclusively that serum can be used successfully by physicians in general practice. A comparison of the fatality rate of the treated cases with the expected fatality rate of cases of the same type not receiving serum indicated a saving of the lives of eighty-nine patients.

Undoubtedly this experiment in pneumonia control in Massachusetts is of great interest to other communities.

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COMPARATIVE MORTALITY OF PATIENTS DISCHARGED FROM TUBERCULOSIS SANATORIA

THE importance of more adequate rehabilitation including continued medical supervision for the tuberculous patient after a period of sanatorium care is strikingly indicated by the rate of survival of such patients for the immediate years after discharge. Dr. H. E. Hilleboe has rendered a service to those interested in tuberculosis control in assembling the post-sanatorium mortality experience of various classes of cases from studies using suitable control populations for comparison.¹ The studies which he discusses particularly are drawn from the Midhurst Sanatorium and the Brompton Sanatorium in England, the Adirondack Cottage Sanitarium (later Trudeau Sanatorium), and the Metropolitan Life Insurance Company's Sanatorium, both in New York State.

¹ Hilleboe, H. E.: The Comparative Mortality of Patients Discharged from Tuberculosis Sanatoria. *The American Review of Tuberculosis*, December, 1936, xxxiv, No. 6.